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OF THE

STATE BOARD OF HEALTH

OF

MASSACHUSETTS.

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1909.

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1909

WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS OF MORE THAN 10,000 POPULATION.

WEEK ENDING JAN. 2, 1909.

CITIES AND TOWNS.	Population,[1] Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	227	63	91	47	30	5	3	1
Worcester,	136,476	31	4	9	4	4	–	–	–
Fall River,	106,486	52	30	19	16	3	–	–	–
Cambridge,	102,112	26	9	16	11	3	–	1	–
Lowell,	96,380	39	9	12	9	2	–	–	–
New Bedford,	85,516	33	14	15	9	2	2	–	–
Lynn,	84,623	24	8	6	–	4	–	–	–
Springfield,	84,237	24	6	10	4	2	2	–	1
Lawrence,	78,000	30	13	9	3	–	2	1	3
Somerville,	76,049	25	8	10	6	3	1	–	–
Brockton,	55,039	6	3	1	1	–	–	–	–
Holyoke,	53,590	9	5	3	1	–	1	–	1
Malden,	41,941	9	2	2	–	2	–	–	–
Chelsea,	40,080	9	1	1	–	1	–	–	–
Newton,	39,642	14	1	3	1	2	–	–	–
Salem,	39,019	20	6	8	5	2	–	–	–
Haverhill,	38,362	8	1	1	–	–	1	–	–
Fitchburg,	34,263	13	4	4	2	1	1	–	–
Everett,	33,597	7	2	1	–	1	–	–	–
Quincy,	31,937	5	1	1	1	–	–	–	–
Taunton,	30,967	11	2	6	5	1	–	–	–
Waltham,	28,761	8	3	3	1	1	–	–	–
Pittsfield,	27,932	9	–	1	–	1	–	–	–
Brookline,	26,674	10	2	3	1	–	1	–	–
Gloucester,	26,011	9	2	–	–	–	–	–	–
North Adams,	22,150	2	2	1	–	–	–	–	–
Northampton,	21,075	2	0	1	1	–	–	–	–
Chicopee,	21,049	5	3	2	–	1	–	–	–
Medford,	20,921	5	–	2	2	–	–	–	–
Beverly,	16,386	5	–	3	2	1	–	–	–
Leominster,	16,030	3	2	1	1	–	–	–	–
Hyde Park,	15,609	3	0	–	–	–	–	–	–
Melrose,	15,459	5	1	2	–	–	–	1	–
Newburyport,	14,834	6	–	3	1	2	–	–	–
Revere,	14,820	1	–	–	–	–	–	–	–
Westfield,	14,750	1	–	–	–	–	–	–	–
Woburn,	14,522	2	0	–	–	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	1	0	–	–	–	–	–	–
Attleborough,	13,913	4	0	–	–	–	–	–	–
Adams,	13,685	2	–	1	–	1	–	–	–
Clinton,	13,105	4	0	2	–	1	–	–	–
Gardner,	13,066	3	2	–	–	–	–	–	–
Milford,	12,722	4	1	–	–	–	–	–	–
Watertown,	12,676	2	1	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	3	–	1	1	–	–	–	–
Weymouth,	11,798	3	0	1	–	–	–	–	–
Framingham,	11,749	4	–	1	1	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	5	1	1	1	–	–	–	–
Greenfield,	10,140	–	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,369,328	733	212	257	137	71	16	6	6

[1] The populations were estimated upon the rate of growth from 1900 to 1905. Those of Taunton, Gloucester, North Adams and Clinton were allowed to stand as in 1905, having shown no increase during the five-year period. The gain in the population of Lowell is due to the annexation of a part of the town of Tewksbury. The population of Lawrence by the census of 1905 was 70,050, but, owing to the building of the new Wood and Arlington mills, an increase of about 8,000 is estimated by the Lawrence board of health, or 78,000.

Week ending Jan. 9, 1909.

Cities and Towns.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	Deaths from —					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	286	59	108	62	34	3	1	–
Worcester,	136,476	48	12	21	13	5	2	–	–
Fall River,	106,486	61	31	34	20	8	1	–	–
Cambridge,	102,112	28	13	15	11	2	–	–	–
Lowell,	96,380	39	12	11	4	5	1	–	–
New Bedford,	85,516	32	20	13	11	–	1	–	1
Lynn,	84,623	19	3	4	–	2	1	–	–
Springfield,	84,237	18	3	3	1	–	–	–	–
Lawrence,	78,000	34	15	15	11	3	–	–	–
Somerville,	76,049	27	9	8	3	2	1	–	–
Brockton,	55,039	13	4	1	1	–	–	–	–
Holyoke,	53,590	11	3	4	3	1	–	–	–
Malden,	41,941	9	3	4	3	1	–	–	–
Chelsea,	40,080	12	4	–	–	–	–	–	–
Newton,	39,642	8	2	2	1	–	1	–	–
Salem,	39,019	20	3	7	3	4	–	–	–
Haverhill,	38,362	15	2	3	2	1	–	–	–
Fitchburg,	34,263	7	2	1	–	1	–	–	–
Everett,	33,597	8	2	1	–	–	1	–	–
Quincy,	31,937	11	3	4	4	–	–	–	–
Taunton,	30,967	8	3	4	4	–	–	–	–
Waltham,	28,761	8	2	1	–	–	–	–	–
Pittsfield,	27,932	10	3	6	3	1	–	1	–
Brookline,	26,674	–	–	–	–	–	–	–	–
Gloucester,	26,011	10	2	3	–	–	2	–	–
North Adams,	22,150	4	1	–	–	–	–	–	–
Northampton,	21,075	8	0	1	1	–	–	–	–
Chicopee,	21,049	7	4	4	1	2	–	1	–
Medford,	20,921	6	–	2	2	–	–	–	–
Beverly,	16,386	4	–	1	1	–	–	–	–
Leominster,	16,030	9	4	3	1	1	–	–	1
Hyde Park,	15,609	4	1	1	–	–	–	–	–
Melrose,	15,459	2	1	1	1	–	–	–	–
Newburyport,	14,834	5	1	1	–	–	1	–	–
Revere,	14,820	0	–	–	–	–	–	–	–
Westfield,	14,750	3	–	1	1	–	–	–	–
Woburn,	14,522	2	1	–	–	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	4	1	–	–	–	–	–	–
Attleborough,	13,913	1	0	–	–	–	–	–	–
Adams,	13,685	4	1	2	–	2	–	–	–
Clinton,	13,105	0	–	–	–	–	–	–	–
Gardner,	13,066	4	0	1	1	–	–	–	–
Milford,	12,722	7	1	3	3	–	–	–	–
Watertown,	12,676	5	0	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	1	–	–	–	–	–	–	–
Weymouth,	11,798	6	1	1	–	–	–	–	–
Framingham,	11,749	6	3	1	1	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	0	–	–	–	–	–	–	–
Greenfield,	10,140	2	–	1	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,352,794	836	235	297	173	75	15	3	2

Week ending Jan. 16, 1909.

Cities and Towns.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	Deaths from—					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	231	62	108	53	23	7	2	1
Worcester,	136,476	35	5	15	7	6	–	–	–
Fall River,	106,486	47	23	28	23	1	–	–	–
Cambridge,	102,112	30	8	10	9	–	–	–	–
Lowell,	96,380	41	17	20	9	7	1	1	–
New Bedford,	85,516	34	12	14	6	4	1	–	–
Lynn,	84,623	23	6	3	–	–	–	–	–
Springfield,	84,237	26	6	11	6	4	1	–	–
Lawrence,	78,000	23	7	8	4	3	–	–	1
Somerville,	76,049	22	6	8	4	2	2	–	–
Brockton,	55,039	14	4	5	2	2	1	–	–
Holyoke,	53,590	23	9	6	3	1	1	–	–
Malden,	41,941	8	1	1	–	1	–	–	–
Chelsea,	40,080	18	6	–	–	–	–	–	–
Newton,	39,642	7	1	3	3	–	–	–	–
Salem,	39,019	12	1	3	2	1	–	–	–
Haverhill,	38,362	11	3	5	1	1	3	–	–
Fitchburg,	34,263	11	6	1	1	–	–	–	–
Everett,	33,597	7	0	2	–	1	–	–	–
Quincy,	31,937	6	–	1	1	–	–	–	–
Taunton,	30,967	11	3	3	1	1	–	1	–
Waltham,	28,761	4	1	1	1	–	–	–	–
Pittsfield,	27,932	12	2	3	2	–	–	–	–
Brookline,	26,674	4	–	–	–	–	–	–	–
Gloucester,	26,011	3	1	–	–	–	–	–	–
North Adams,	22,150	4	4	1	–	1	–	–	–
Northampton,	21,075	4	0	1	–	1	–	–	–
Chicopee,	21,049	11	6	4	2	2	–	–	–
Medford,	20,921	10	2	3	2	–	–	–	–
Beverly,	16,386	8	3	1	–	–	1	–	–
Leominster,	16,030	6	–	2	2	–	–	–	–
Hyde Park,	15,609	6	0	1	–	–	–	–	–
Melrose,	15,459	2	1	2	2	–	–	–	–
Newburyport,	14,834	2	1	–	–	–	–	–	–
Revere,	14,820	3	–	–	–	–	–	–	–
Westfield,	14,750	4	1	1	–	1	–	–	–
Woburn,	14,522	3	1	1	–	–	1	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	4	0	1	1	–	–	–	–
Attleborough,	13,913	1	1	–	–	–	–	–	–
Adams,	13,685	1	1	–	–	–	–	–	–
Clinton,	13,105	5	1	–	–	–	–	–	–
Gardner,	13,066	9	1	1	1	–	–	–	–
Milford,	12,722	1	0	1	1	–	–	–	–
Watertown,	12,676	5	3	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	4	2	3	–	1	1	1	–
Weymouth,	11,798	2	–	–	–	–	–	–	–
Framingham,	11,749	2	–	1	1	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	2	2	–	–	–	–	–	–
Greenfield,	10,140	1	1	–	–	–	–	–	–

Recapitulation.

Total of reporting towns,	2,379,468	763	221	283	150	64	20	5	2

WEEK ENDING JAN. 23, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	226	64	101	42	30	4	4	–
Worcester,	136,476	30	4	8	3	1	–	1	–
Fall River,	106,486	33	15	6	–	2	–	–	–
Cambridge,	102,112	34	7	10	3	3	2	–	–
Lowell,	96,380	32	9	11	7	4	–	–	–
New Bedford,	85,516	25	11	8	4	1	–	–	–
Lynn,	84,623	28	12	5	–	1	1	–	–
Springfield,	84,237	21	2	6	3	2	–	1	–
Lawrence,	78,000	31	12	16	5	6	–	1	3
Somerville,	76,049	13	6	3	2	1	–	–	–
Brockton,	55,039	15	7	9	6	1	–	–	1
Holyoke,	53,590	16	9	4	4	–	–	–	–
Malden,	41,941	7	2	3	1	1	–	–	–
Chelsea,	40,080	8	3	2	–	–	–	–	–
Newton,	39,642	5	–	2	1	–	1	–	–
Salem,	39,019	13	1	4	2	2	–	–	–
Haverhill,	38,362	9	–	2	1	1	–	–	–
Fitchburg,	34,263	15	2	4	1	2	1	–	–
Everett,	33,597	7	1	–	–	–	–	–	–
Quincy,	31,937	10	–	1	1	–	–	–	–
Taunton,	30,967	14	7	6	6	–	–	–	–
Waltham,	28,761	4	2	2	2	–	–	–	–
Pittsfield,	27,932	8	2	2	2	–	–	–	–
Brookline,	26,674	5	1	3	2	–	1	–	–
Gloucester,	26,011	9	–	4	–	1	–	–	–
North Adams,	22,150	3	1	1	1	–	–	–	–
Northampton,	21,075	4	0	–	–	–	–	–	–
Chicopee,	21,049	8	3	2	–	2	–	–	–
Medford,	20,921	4	–	2	1	–	–	–	–
Beverly,	16,386	4	–	2	2	–	–	–	–
Leominster,	16,030	2	–	2	1	–	–	–	–
Hyde Park,	15,609	5	2	–	–	–	–	–	–
Melrose,	15,459	2	1	2	1	–	–	–	–
Newburyport,	14,834	3	2	2	2	–	–	–	–
Revere,	14,820	12	6	6	4	2	–	–	–
Westfield,	14,750	5	3	–	–	–	–	–	–
Woburn,	14,522	4	1	1	–	1	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	3	1	–	–	–	–	–	–
Attleborough,	13,913	4	1	3	2	–	1	–	–
Adams,	13,685	2	1	–	–	–	–	–	–
Clinton,	13,105	6	0	–	–	–	–	–	–
Gardner,	13,066	4	2	1	1	–	–	–	–
Milford,	12,722	1	0	–	–	–	–	–	–
Watertown,	12,676	1	0	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	8	3	1	–	1	–	–	–
Weymouth,	11,798	1	–	–	–	–	–	–	–
Framingham,	11,749	5	2	–	–	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	2	1	–	–	–	–	–	–
Greenfield,	10,140	1	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,379,468	712	209	247	113	65	11	7	4

WEEK ENDING JAN. 30, 1909.

CITIES AND TOWNS.	Population Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles
Boston,	624,491	234	64	72	30	21	5	1	1
Worcester,	136,476	41	13	8	2	5	–	–	–
Fall River,	106,486	34	12	9	3	2	–	–	–
Cambridge,	102,112	25	2	7	1	4	–	–	–
Lowell,	96,380	36	13	11	9	1	1	–	–
New Bedford,	85,516	43	23	26	18	5	1	–	–
Lynn,	84,623	21	3	4	–	4	–	–	–
Springfield,	84,237	22	3	6	3	2	1	–	–
Lawrence,	78,000	25	10	9	9	–	–	–	–
Somerville,	76,049	18	7	11	6	2	1	–	–
Brockton,	55,039	10	2	4	2	2	–	–	–
Holyoke,	53,590	19	5	9	5	3	–	–	–
Malden,	41,941	11	4	4	3	–	–	–	–
Chelsea,	40,080	11	2	–	–	–	–	–	–
Newton,	39,642	10	3	5	5	–	–	–	–
Salem,	39,019	13	0	3	2	–	1	–	–
Haverhill,	38,362	17	3	6	1	3	2	–	–
Fitchburg,	34,263	6	3	4	2	1	1	–	–
Everett,	33,597	10	2	2	–	1	1	–	–
Quincy,	31,937	8	3	1	1	–	–	–	–
Taunton,	30,967	9	3	3	3	–	–	–	–
Waltham,	28,761	7	1	3	2	–	1	–	–
Pittsfield,	27,932	8	0	2	1	1	–	–	–
Brookline,	26,674	8	–	–	–	–	–	–	–
Gloucester,	26,011	3	–	–	–	–	–	–	–
North Adams,	22,150	5	3	2	1	–	–	–	–
Northampton,	21,075	4	2	–	–	–	–	–	–
Chicopee,	21,049	7	2	1	1	–	–	–	–
Medford,	20,921	6	–	2	–	1	–	–	–
Beverly,	16,386	4	–	2	1	1	–	–	–
Leominster,	16,030	2	1	–	–	–	–	–	–
Hyde Park,	15,609	1	0	–	–	–	–	–	–
Melrose,	15,459	3	1	1	–	–	–	–	–
Newburyport,	14,834	3	1	2	1	–	–	–	–
Revere,	14,820	3	–	–	–	–	–	–	–
Westfield,	14,750	7	2	2	1	1	–	–	–
Woburn,	14,522	1	0	1	1	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	5	2	3	2	1	–	–	–
Attleborough,	13,913	4	1	–	–	–	–	–	–
Adams,	13,685	2	–	–	–	–	–	–	–
Clinton,	13,105	–	–	–	–	–	–	–	–
Gardner,	13,066	3	1	1	–	–	–	–	1
Milford,	12,722	5	2	2	–	–	–	–	–
Watertown,	12,676	1	1	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	6	5	3	2	–	1	–	–
Weymouth,	11,798	2	0	–	–	–	–	–	–
Framingham,	11,749	1	–	–	–	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	1	–	–	–	–	–	–	–
Greenfield,	10,140	3	1	3	2	–	–	–	–

Recapitulation.

Total of reporting towns,	2,366,363	728	206	234	120	61	16	1	2

WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.

DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF JANUARY 2, 9, 16, 23 AND 30, 1909.

DISEASE.	Place.	WEEK ENDING —				
		Jan. 2.	Jan. 9.	Jan. 16.	Jan. 23.	Jan. 30.
Cerebro-spinal meningitis,	Boston,	–	–	–	1	–
	Gloucester,	–	1	–	–	–
	Hyde Park,	–	–	1	–	–
	New Bedford,	–	–	–	1	–
	Newburyport,	–	–	–	–	1
	Worcester,	1	1	–	2	1
Scarlet fever,	Boston,	1	2	1	3	7
	Brockton,	–	–	–	1	–
	Cambridge,	–	1	–	2	1
	Lawrence,	–	–	–	1	–
	Lynn,	1	1	–	–	–
	Lowell,	–	1	–	–	–
	Medford,	–	–	–	1	–
	Milford,	–	–	–	–	2
	Somerville,	–	2	–	–	–
	Waltham,	1	1	–	–	–
	Weymouth,	–	1	–	–	–
Whooping cough,	Boston,	1	3	10	4	2
	Cambridge,	1	1	1	–	1
	Chelsea,	–	–	–	2	–
	Fall River,	–	1	–	–	–
	Gloucester,	–	–	–	3	–
	Hyde Park,	–	1	–	–	–
	Lowell,	1	–	1	–	–
	Malden,	–	–	–	–	1
	New Bedford,	–	–	1	–	–
	Salem,	1	–	–	–	–
Meningitis, other than cerebro-spinal.	Lynn,	1	–	3	2	–
	Malden,	–	–	–	1	–
	Medford,	–	–	–	–	1
	Pittsfield,	–	–	1	–	–
Tuberculosis, other than pulmonary.	Greenfield,	–	1	–	–	–
	Melrose,	–	–	–	1	–
	No. Adams,	1	–	–	–	–
	Springfield,	–	1	–	–	–

DISEASE.	Place.	Week ending— Jan. 2.	Jan. 9.	Jan. 16.	Jan. 23.	Jan. 30.
Erysipelas,	Boston,	–	1	1	1	1
	Everett,	–	–	1	–	–
	Greenfield,	–	–	–	–	1
	Lowell,	–	–	1	–	–
	Lynn,	–	–	–	1	–
	Melrose,	1	–	–	–	1
	New Bedford,	–	–	–	1	–
	Springfield,	–	1	–	–	–
	Worcester,	–	–	2	–	–
Influenza,	Leominster,	–	–	–	1	–
	Medford,	–	–	1	–	–
	No. Adams,	–	–	–	–	1
	Springfield,	1	–	–	–	–

WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

Cases of Infectious Diseases reported during the Weeks of January 2, 9, 16, 23 and 30, 1909.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending— Jan. 2.	Jan. 9.	Jan. 16.	Jan. 23.	Jan. 30.
Diphtheria,	254	207	223	191	180
Measles,	192	201	212	281	327
Scarlet fever,	235	256	198	205	180
Typhoid fever,	48	38	35	31	32
Tuberculosis, pulmonary,	155	146	94	145	105
Cerebro-spinal meningitis,	2	1	1	3	1
Whooping cough,	105	79	97	122	91
Varicella,	56	104	70	72	77
Erysipelas,	1	–	–	–	–
Mumps,	1	–	2	–	5
Meningitis other than cerebro-spinal,	2	–	–	–	–
Ophthalmia neonatorum,	1	2	1	1	1
Anterior poliomyelitis,	–	1	–	–	–
Tuberculosis other than pulmonary,	–	1	–	–	–
Smallpox,	–	1	–	–	–

MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of January, 1909: —

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Baking powder,	1	–	1	Maple syrup,	1	–	1
Butter,	5	–	5	Meat products: —			
Cheese,	4	–	4	Hamburg steak,	27	18	45
Cider,	4	3	7	Sausages,	64	15	79
Cocoa,	2	–	2	Lambs' tongues,	1	–	1
Coffee,	3	–	3	Pigs' feet,	2	–	2
Confectionery,	2	–	2	Head cheese,	4	–	4
Condensed milk,	3	–	3	Canned meats,	4	–	4
Cream,	59	5	64	Mince meat,	1	–	1
Cream of tartar,	4	–	4	Tripe,	2	–	2
Drugs,	61	16	77	Milk,	233	41	274
Extract of lemon,	3	–	3	Oysters,	2	–	2
Extract of vanilla,	5	1	6	Spices,	8	–	8
Grape juice,	2	–	2	Syrup,	1	–	1
Honey,	1	–	1	Table sauce,	6	–	6
Jams and jellies,	6	2	8	Vinegar,	18	4	22
Lard,	9	–	9				
Malt liquor (ale),	3	–	3	Total,	553	105	658
Maple sugar,	2	–	2				

The samples of drugs found to be adulterated were: olive oil, spirit of nitrous ether, spirit of camphor, tincture of iodine and several proprietary medicines.

The cities and towns in which samples were collected, were: Adams, Andover, Ayer, Bedford, Boston, Brookline, Cambridge, Chicopee, Concord, Greenfield, Haverhill, Holyoke, Lawrence, Lowell, Lynn, Malden, Marlborough, Melrose, Methuen, North Adams, New Bedford, North Reading, Reading, Shelburne, Springfield, Wakefield, Watertown, Westfield, West Springfield, Weymouth and Worcester.

PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING TO FOOD AND DRUGS.

Sixteen convictions were secured during the month of January, 1909, for selling adulterated food, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	Oscar Drew (Drew Brothers),	Boston,	Butter (renovated).[1]
2	Oscar Drew (Drew Brothers),	Boston,	Cider.[1,2]
3	Albert J. Barney,	New Bedford,	Hamburg steak.[2]
4	Benj F. Thomas,	Boston,	Hamburg steak.[2]
5	Charles W. Emerson,	Haverhill,	Milk (total solids, 11.37).
6	Morris E. Field,	Greenfield,	Milk (skimmed).[3]
7	Duane H. Waller,	Westford,	Milk (total solids, 11.60).
8	Joseph Fortunate,	Revere,	Milk (total solids, 11.47).
9	James H. Carr,	Lowell,	Tomato catsup.[2]
10	John R. Harris,	Lawrence,	Tomato sausage.[2]
11	Phillip W. Rounsewell,	Boston,	Tomato sausage.[2]
12	Phillip W. Rounsewell,	Boston,	Tomato sausage.[2]
13	James Smith,	Lowell,	Tomato sausage.[2]
14	Frank R. Pease,	New Bedford,	Tincture iodine.[4]
15	A. Frank Clark,	New Bedford,	Vinegar.[4]
16	William H. Wood,	New Bedford,	Vinegar.[4]

[1] Appealed.
[2] Contained a preservative.
[3] Watered.
[4] Below standard.

Fines imposed, $277.

LIST OF ADULTERATED OR IMPROPERLY LABELLED FOODS, ETC., FOR JANUARY, 1909.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
9070	Concentrated tomato soup.	The Van Camp Packing Company, Indianapolis, Ind.,	Preserved with benzoic acid.
9006	"Mohican" raspberry jam.	Mohican Company, New York, N. Y.,	Preserved with benzoic acid; percentage of preservative not stated.
9069	Strawberry preserve,	The Twitchell-Champlin Company, Portland, Me., and Boston, Mass.	Preserved with salicylic acid.
8559	Pure extract vanilla,	C. H. Morse Manufacturing Company, Pawtucket, R. I.,	Contained coumarin.
9702 M	Spirit vinegar, Mass. State test.	Fleischmann, New York, N. Y.,	Low in acid.
9708 M	Mass. State test vinegar, natural color.	Fleischmann, New York, N. Y.,	Low in acid.
8976	Milk,	John P. Dowling, Pittsfield, Mass.,	Total solids, 12.00 per cent.; contained added water.
8979	Milk,	James A. Torrey, Pittsfield, Mass.,	Total solids, 11.80 per cent.; contained added water.
56 N	Skimmed milk,	Jabez R. Summersgill, Lawrence, Mass.,	Total solids, 8.27 per cent.; contained added water.
8719 P	Skimmed milk,	Morris E. Field, Greenfield, Mass.,	Total solids, 7.43 per cent.; contained added water.
q 1586	Milk,	Rogler's Restaurant, 72 Williams Street, New Bedford, Mass.	Total solids, 10.23 per cent.; fat, 1.60 per cent.; proteids, 3.09 per cent.; skimmed milk.
8923	Cream,	Fred E. Webb, Springfield, Mass.,	Fat, 30.8 per cent.; contained sugar and calcium sucrate.
8942	Cream,		Fat, 32.0 per cent.; contained sugar and calcium sucrate.
8939	Cream,	M. A. Allen, W. Springfield, Mass.,	Fat, 31.6 per cent.; contained sugar and calcium sucrate.
8943	Cream,	Columbia Creamery Company, Springfield, Mass.,	Fat, 28.8 per cent.; contained sugar and calcium sucrate.
9001	Cream,	Daniel A. Neylon, Springfield, Mass.,	Fat, 30.8 per cent.; contained sugar and calcium sucrate.
8971 P	Dr. Wilson's wine of cod liver oil.	The Walker-Rintels Drug Company, Boston, Mass.,	Contained 12.5 per cent. alcohol by volume.

INSPECTION OF DAIRIES.

During the month of January, 1909, 199 dairies were examined in the following places: —

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number to which Letters were sent.	Per Cent.
Gardner,	7	6	85.71	1	14.29
Second inspection,	20	12	60.00	8	40.00
Hubbardston,	6	1	16.67	5	83.33
Second inspection,	19	9	47.37	10	52.63
Marblehead,	1	1	100.00	–	–
Second inspection,	1	1	100.00	–	–
Third inspection,	2	1	50.00	1	50 00
Southwick,	15	6	40.00	9	60.00
Second inspection,	12	3	25.00	9	75.00
Watertown,	–	–	–	–	–
Third inspection,	1	1	100.00	–	–
Westfield,	27	3	11.11	24	88.89
Second inspection,	23	8	34.78	15	65.22
Westford,	18	8	44.44	10	55.56
Second inspection,	47	32	68.09	15	31.91

Total number of dairies examined,	199
Number found to be free from objectionable conditions,	92
Number to which letters were sent,	107
Total number of conditions to which attention was called,	369
Percentage of dairies which passed inspection,	46.23

The names of the owners of dairies found to be worthy of commendation follow: —

Gardner.

Brown, C. E.[1,2]
Clark, W. P.[1]
Fournier, Mrs. Charles H.[1]
Gardner Town Farm [1]
Gigger, E. G.
Haywood, Mrs. Helen R.[1,2]
Knight, W. E.[1]
Matson, William
Miller, W. H.
Nelson, Carl [1,2]
Nissula, John
Page, F. B.[1]
Pierce, F. J.[1,2]
Rice, H. W.
Ware Bros.
Whitcomb, G. N.[1]
Wilder Farm [1]
Wilson, Frank W.[1,2]

Hubbardston.

Brigham, H. E.[1]
Claflin, H. S.[1,2]
Clark, Warren [1,2]
Gleason, Estate of F. S.[1,2]
Hayes, Frank P.[1]
Morse, George E.[1]
Savage, J. P.[1]
Tilton, Edgar [1,2]
White. Royal A.
Woodward, A. S.[1,2]

Marblehead.

Bessom, Benjamin B.[1,2]
Martin Dairy Co.
Sullivan, James [3]

[1] Second inspection. [2] Reported favorably on first inspection as well. [3] Third inspection.

Southwick.

Crane, Robert B.
Curtis, Charles [1]
Fuller & Palmer
Jackson, Fred G.
Lamson, Marion
Nash, Stephen
Palmer, Dwight J.[1]
Petersen, Carl
Storey, W. E.[1]

Watertown.

Howard, Henry M.[3]

Westfield.

Beckwith, E. E.[1]
Bull, Jonathan
Fowler, Charles F.[1,2]
Gruber, Joseph [1]
McElligott, John
Noble, Wells [1]
Norton, L. D.[1]
Pease, I.
Prout, Peter Sr.[1]
Stevens, George [1]
Thayer, William [1,2]

Westford.

Brown, George [1,2]
Bunce, A.[1]
Burbeck, John [1]
Burnham, A. H.[1]
Colburn, Jonathan [1]
Collins, P. G.[1]
Crossland, Samuel [1]
Day, George H.[1]
Decatur, William H.[1]
Desmond, David [1]
Flagg, E. H.[1,2]
Fletcher, J. Henry [1,2]
Forster, O. A.
Gregg, B. L.[1]
Griffin, Charles
Haley, John
Hartford, George [1]
Hildreth, Charles L.[1,2]
Howard, C. L.[1]
Jenne, A. E.[1]
Kimball, George [1]
LaDuke, John
McDonald, Angus [1]
McLeod, Donald,[1]
Mitchell, Victor [1]
Murphy, Henry [1]
Osgood, H. G.[1]
Prescott, Richard
Reid, H. B.[1]
Shorey, H. E.[1]
Spalding, Oscar [1]
Sweetser, J. F.[1,2]
Walkden, J. A.[1]
Wentworth, G. A.
Westford Town Farm [1]
Wheeler, L. W.[1]
Whitney, C. H.[1]
Whitney, Julian
Wilson, James
Wilson, T. Arthur E.[1]

VACCINATION.

In the "New York Medical Journal" for Jan. 16, 1909, appears a most valuable series of contributions upon vaccination in its medical and legal aspects. These articles by experts upon smallpox, Drs. Abbott, Welch and Schamberg, and Hampton L. Carson, Esq., were read at a meeting of the Philadelphia County Medical Society, Nov. 25, 1908, and are published most apropos, this being the season for the annual agitation against compulsory vaccination. The papers and their discussions are clear and forcible, and should carry conviction to all who approach the subject with an open mind. Smallpox is nowadays such a rare disease that it is difficult, if not impossible, for us of this place and generation to realize what a real scourge the disease has been. In this day, for instance, there are undoubtedly many young physicians who never saw a case of smallpox. In unvaccinated communities, however, the disease

[1] Second inspection. [2] Reported favorably on first inspection as well. [3] Third inspection.

still raises its head and is responsible for many deaths. In this connection the experience of American sanitarians in the Philippines is of interest. Heiser, in the "Journal of the American Medical Association" for Jan. 9, 1909, states that: "In the provinces near Manila, which represent a population of about a million, there were formerly 6,000 or more deaths from smallpox annually. Last year, after systematic vaccination was completed, not one death occurred from smallpox." This remarkable result is typical of all well-vaccinated communities.

Germany, for example, which has had since 1874 not only compulsory vaccination before the end of the first year of life, but also compulsory revaccination before the age of twelve, has suffered since that year not a single epidemic of smallpox. From 1893 to 1897 there were in the whole German empire only 287 deaths from smallpox. During the same period there died from smallpox in the Russian empire 275,502 persons; in Spain, 23,000; in Hungary, 12,000; in Austria and Italy, 11,000. In Philadelphia alone, from 1901 to 1905, 5,000 had the disease and 500 persons died. There was no death of persons who had been successfully vaccinated within ten years.

That smallpox has decreased remarkably in frequency during the past century the opponents of vaccination acknowledge; but they ascribe the decrease to improvement in sanitary conditions, quite oblivious to the fact that while the mortality of smallpox was decreasing 72 per cent. that of measles fell only 9 per cent., whooping-cough 1 per cent. and the general mortality 9 per cent. Furthermore, a striking change in the age incidence of smallpox goes to prove the value of vaccination. Before vaccination, smallpox was a disease of children. Adults did not have it so commonly, because they had already passed through it in childhood, and were therefore immune. Now, conditions are reversed. Children fail to have the disease because they in general have been vaccinated once at least; adults have the disease because they fail to be revaccinated.

As to the dangers of vaccination, they are practically nil, and, compared with the benefits conferred, not to be considered. Pure vaccine, applied and cared for with strict surgical cleanliness, will ensure good results. Bad results cannot be blamed upon the practice of vaccination as such.

In its legal aspects Mr. Carson dealt with the question, "Whether, assuming that the Legislature after listening to the debate upon the propriety of safeguarding the public health by legislation enforcing compulsory vaccination adopts such a statute, such a statute is within the constitutional power of the Legislature, and whether it is free from the objection often urged, that it is an invasion of the personal liberty of the citizen."

"In every well-ordered community there exists a power generally known as the police power. . . . Every law for the restriction or punishment of crime for the preservation of the public peace, *health,* morals, must come within the limits of this power. . . . The Legislature cannot by any contract divest itself of the power to designate the objects over which the police power extends. . . . In short, police power is an equivalent term for legislative power. . . . The police power is a broad and comprehensive power, by which the rights of an individual, both as to his liberty and his enjoyment of property, may be curtailed in the interest of the public welfare."

"Is the exclusion from the public schools of children who have not been vaccinated a valid exercise of the police power of a State?" Such an exercise of power comes under "cautionary and prospective legislation, having in view not the actual presence of the disease, but its appearance in the future."

The constitutionality of the exercise of this power is thus declared by the supreme court of Pennsylvania. Pennsylvania, like Massachusetts, has no law making vaccination compulsory, except in this indirect manner, which, as Mr. Carson well states, "seems to bring about the loss of education at the expense of the State."

QUARTERLY PUBLICATIONS OF THE AMERICAN STATISTICAL ASSOCIATION, DECEMBER, 1908.

OCCUPATION MORTALITY STATISTICS OF SHEFFIELD, ENGLAND, 1890–1907.

By F. S. Crum.

The annual reports of the Medical Officer of Health of Sheffield, England, have long been of special interest and value because they have contained occupation mortality data. This fact in itself is sufficient to mark the reports as being unique, for mortality by occupation is very rarely included in the health reports of England or any other country. Sheffield being an important center for the manufacture of cutlery and files, many men are employed there as cutlers, grinders, tool makers, file makers, etc., and the occupation statistics are of special value because they throw considerable light upon certain trades which are health-injurious.

The present report, like those for many previous years, contains the tabulated mortality returns for all of the important occupations. The

industries of special importance, however, are those already specifically mentioned. The following table, found on page xi of the report for 1907, will indicate in a rough way the effect of certain occupations on mortality, and particularly their effect on the mortality from certain causes of death: —

Average Mortality in Sheffield from All Causes and from Phthisis and Diseases of the Respiratory Organs during the Three Years, 1905, 1906 and 1907, in Certain Dusty Trades, and among All Males over Twenty Years of Age.

TRADE.	Males over 20 Years of Age (Estimated Population).	Average Death-rates per 1,000 Living.		
		All Causes.	Phthisis.	Respiratory Diseases.
Grinders, ...	3,375	34.2	16.3	5.7
Cutlers, ...	2,500	40.8	7.2	8.4
File-cutters, ...	1,850	32.1	4.5	5.4
Silver, etc., workers, . .	2,380	26.9	5.5	4.9
All males, ...	127,000	16.2	2.6	2.1

This table would have been more useful if it had been given by divisional periods of life, but even in its present form it is suggestive of the baneful effect on health of certain trades which expose the workmen to mineral and metallic dust. The mortality rate from all causes is shown to have been more than double the expected rate for grinders and cutlers, and excessive for file cutters and other metal goods workers. The mortality from phthisis was more than six times as high for grinders as for all males, and very much in excess also among the other metal workers. The mortality from respiratory diseases was four times as high for cutlers as for all occupied males, and considerably in excess among other metal workers.

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WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS OF MORE THAN 10,000 POPULATION.

WEEK ENDING FEB. 6, 1909.

CITIES AND TOWNS.	Population.[1] Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Disease.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	207	47	74	29	27	5	2	–
Worcester,	136,476	41	7	11	9	1	–	–	–
Fall River,	106,486	45	19	18	7	3	–	–	–
Cambridge,	102,112	24	6	9	7	1	–	–	–
Lowell,	96,380	44	17	15	7	4	3	–	–
New Bedford,	85,516	23	10	13	10	–	1	1	–
Lynn,	84,623	26	4	5	–	2	2	1	–
Springfield,	84,237	18	3	10	7	2	1	–	–
Lawrence,	78,000	30	15	11	9	2	–	–	–
Somerville,	76,049	22	3	10	3	5	1	–	–
Brockton,	55,039	16	7	5	3	1	–	–	–
Holyoke,	53,590	23	12	6	3	1	–	–	–
Malden,	41,941	10	3	4	2	–	1	–	–
Chelsea,	40,080	8	1	1	–	1	–	–	–
Newton,	39,642	8	1	1	1	–	–	–	–
Salem,	39,019	13	5	2	2	–	–	–	–
Haverhill,	38,362	11	1	5	1	4	–	–	–
Fitchburg,	34,263	8	2	–	–	–	–	–	–
Everett,	33,597	5	1	1	–	–	–	–	–
Quincy,	31,937	6	1	1	–	1	–	–	–
Taunton,	30,967	15	5	5	4	–	–	–	–
Waltham,	28,761	2	1	–	–	–	–	–	–
Pittsfield,	27,932	6	1	3	1	–	1	–	1
Brookline,	26,674	8	–	3	2	–	1	–	–
Gloucester,	26,011	5	1	1	–	–	1	–	–
North Adams,	22,150	10	2	5	1	2	–	–	–
Northampton,	21,075	5	0	1	–	1	–	–	–
Chicopee,	21,049	6	4	2	2	–	–	–	–
Medford,	20,921	1	–	–	–	–	–	–	–
Beverly,	16,386	4	–	1	–	1	–	–	–
Leominster,	16,030	5	2	–	–	–	–	–	–
Hyde Park,	15,609	3	0	–	–	–	–	–	–
Melrose,	15,459	3	1	2	2	–	–	–	–
Newburyport,	14,834	3	2	1	1	–	–	–	–
Revere,	14,820	4	2	–	–	–	–	–	–
Westfield,	14,750	4	1	1	–	1	–	–	–
Woburn,	14,522	4	0	–	–	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	6	1	–	–	–	–	–	–
Attleborough,	13,913	2	0	–	–	–	–	–	–
Adams,	13,685	2	1	1	–	–	–	–	–
Clinton,	13,105	2	1	–	–	–	–	–	–
Gardner,	13,066	3	1	2	2	–	–	–	–
Milford,	12,722	2	1	1	–	1	–	–	–
Watertown,	12,676	1	0	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	–	–	–	–	–	–	–	–
Weymouth,	11,798	1	0	–	–	–	–	–	–
Framingham,	11,749	6	2	1	1	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	3	0	–	–	–	–	–	–
Greenfield,	10,140	0	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,367,620	704	194	232	116	61	17	4	1

[1] The populations were estimated upon the rate of growth from 1900 to 1905. Those of Taunton, Gloucester, North Adams and Clinton were allowed to stand as in 1905, having shown no increase during the five-year period. The gain in the population of Lowell is due to the annexation of a part of the town of Tewksbury. The population of Lawrence by the census of 1905 was 70,050, but, owing to the building of the new Wood and Arlington mills, an increase of about 8,000 is estimated by the Lawrence board of health, or 78,000.

WEEK ENDING FEB. 13, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever	Measles.
Boston,	624,491	219	48	90	40	27	4	1	–
Worcester,	136,476	42	10	8	4	2	–	–	–
Fall River,	106,486	41	17	19	9	1	1	–	–
Cambridge,	102,112	30	10	12	4	5	–	–	–
Lowell,	96,380	37	7	17	8	8	–	–	–
New Bedford,	85,516	37	18	11	8	–	2	–	–
Lynn,	84,623	36	7	8	–	3	1	–	1
Springfield,	84,237	22	8	7	4	1	–	–	–
Lawrence,	78,000	32	15	15	8	4	2	–	–
Somerville,	76,049	19	3	4	2	2	–	–	–
Brockton,	55,039	13	4	4	2	–	–	–	–
Holyoke,	53,590	11	3	7	2	3	–	–	–
Malden,	41,941	8	2	4	2	2	–	–	–
Chelsea,	40,080	10	1	2	–	2	–	–	–
Newton,	39,642	8	–	2	–	1	–	1	–
Salem,	39,019	8	1	2	1	1	–	–	–
Haverhill,	38,362	15	2	4	1	2	1	–	–
Fitchburg,	34,263	9	2	1	1	–	–	–	–
Everett,	33,597	9	2	2	–	2	–	–	–
Quincy,	31,937	6	1	–	–	–	–	–	–
Taunton,	30,967	16	5	5	5	–	–	–	–
Waltham,	28,761	6	1	2	2	–	–	–	–
Pittsfield,	27,932	7	2	1	1	–	–	–	–
Brookline,	26,674	12	1	3	1	1	–	–	–
Gloucester,	26,011	5	2	–	–	–	–	–	–
North Adams,	22,150	5	2	1	1	–	–	–	–
Northampton,	21,075	3	1	2	–	2	–	–	–
Chicopee,	21,049	8	4	3	2	–	1	–	–
Medford,	20,921	7	2	3	1	1	–	–	–
Beverly,	16,386	5	–	3	3	–	–	–	–
Leominster,	16,030	4	4	3	3	–	–	–	–
Hyde Park,	15,609	2	0	1	–	–	–	1	–
Melrose,	15,459	3	0	–	–	–	–	–	–
Newburyport,	14,834	9	1	3	1	2	–	–	–
Revere,	14,820	6	2	1	1	–	–	–	–
Westfield,	14,750	3	–	2	–	2	–	–	–
Woburn,	14,522	4	0	–	–	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	5	2	–	–	–	–	–	–
Attleborough,	13,913	1	1	–	–	–	–	–	–
Adams,	13,685	6	3	6	2	1	–	–	–
Clinton,	13,105	3	0	–	–	–	–	–	–
Gardner,	13,066	2	1	1	1	–	–	–	–
Milford,	12,722	4	0	1	–	1	–	–	–
Watertown,	12,676	1	0	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	3	–	–	–	–	–	–	–
Weymouth,	11,798	3	1	2	1	–	–	–	–
Framingham,	11,749	6	–	3	2	1	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	1	–	–	–	–	–	–	–
Greenfield,	10,140	1	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,379,468	753	196	265	123	77	12	3	1

WEEK ENDING FEB. 20, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever	Measles.
Boston,	624,491	265	69	85	36	29	3	–	2
Worcester,	136,476	39	11	15	9	4	–	–	–
Fall River,	106,486	41	23	19	10	6	–	–	–
Cambridge,	102,112	23	5	6	2	3	1	–	–
Lowell,	96,380	41	14	20	13	4	1	–	–
New Bedford,	85,516	29	10	10	7	2	–	–	–
Lynn,	84,623	21	2	–	–	–	–	–	–
Springfield,	84,237	26	6	8	5	2	–	–	–
Lawrence,	78,000	27	9	18	12	6	–	–	–
Somerville,	76,049	29	8	8	6	1	–	–	–
Brockton,	55,039	21	7	6	3	1	–	–	–
Holyoke,	53,590	22	9	11	5	4	–	–	–
Malden,	41,941	15	5	7	3	2	–	–	–
Chelsea,	40,080	11	0	2	–	2	–	–	–
Newton,	39,642	9	2	3	2	1	–	–	–
Salem,	39,019	17	5	2	1	1	–	–	–
Haverhill,	38,362	17	3	4	2	2	–	–	–
Fitchburg,	34,263	8	5	1	–	–	1	–	–
Everett,	33,597	12	3	2	–	1	–	–	–
Quincy,	31,937	9	1	3	1	1	–	–	–
Taunton,	30,967	17	3	8	5	3	–	–	–
Waltham,	28,761	10	2	3	2	–	–	–	–
Pittsfield,	27,932	9	0	–	–	–	–	–	–
Brookline,	26,674	5	–	4	2	2	–	–	–
Gloucester,	26,011	5	2	1	–	1	–	–	–
North Adams,	22,150	17	5	6	4	–	–	–	–
Northampton,	21,075	5	0	2	2	–	–	–	–
Chicopee,	21,049	10	4	6	4	2	–	–	–
Medford,	20,921	2	2	–	–	–	–	–	–
Beverly,	16,386	1	1	1	1	–	–	–	–
Leominster,	16,030	4	–	–	–	–	–	–	–
Hyde Park,	15,609	3	0	–	–	–	–	–	–
Melrose,	15,459	5	1	1	1	–	–	–	–
Newburyport,	14,834	10	–	3	2	1	–	–	–
Revere,	14,820	5	3	1	1	–	–	–	–
Westfield,	14,750	7	2	4	4	–	–	–	–
Woburn,	14,522	5	1	5	1	4	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	7	1	1	1	–	–	–	–
Attleborough,	13,913	2	0	–	–	–	–	–	–
Adams,	13,685	4	–	2	–	2	–	–	–
Clinton,	13,105	6	1	–	–	–	–	–	–
Gardner,	13,066	4	2	1	1	–	–	–	–
Milford,	12,722	1	1	1	–	–	–	–	–
Watertown,	12,676	5	1	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	5	2	–	–	–	–	–	–
Weymouth,	11,798	3	2	2	1	–	–	–	–
Framingham,	11,749	2	1	–	–	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	4	–	1	–	1	–	–	–
Greenfield,	10,140	3	–	1	1	–	–	–	–

Recapitulation.

Total of reporting towns,	2,379,468	848	234	284	150	88	6	–	2

WEEK ENDING FEB. 27, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM—					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	225	74	74	34	13	6	1	3
Worcester,	136,476	40	9	13	8	1	1	–	–
Fall River,	106,486	31	10	13	5	2	–	–	–
Cambridge,	102,112	35	16	12	8	–	–	–	–
Lowell,	96,380	38	11	14	9	4	–	–	–
New Bedford,	85,516	30	11	11	4	4	–	–	–
Lynn,	84,623	32	5	2	–	2	–	–	–
Springfield,	84,237	24	7	4	2	–	1	–	–
Lawrence,	78,000	35	15	11	6	2	–	1	–
Somerville,	76,049	36	10	11	4	3	3	–	–
Brockton,	55,039	7	4	2	1	–	–	–	–
Holyoke,	53,590	25	13	13	8	3	–	–	1
Malden,	41,941	11	5	3	2	1	–	–	–
Chelsea,	40,080	9	3	1	–	1	–	–	–
Newton,	39,642	12	2	3	2	1	–	–	–
Salem,	39,019	10	2	2	1	–	1	–	–
Haverhill,	38,362	10	2	6	4	2	–	–	–
Fitchburg,	34,263	14	5	5	4	–	–	1	–
Everett,	33,597	4	1	–	–	–	–	–	–
Quincy,	31,937	7	1	–	–	–	–	–	–
Taunton,	30,967	13	8	4	3	1	–	–	–
Waltham,	28,761	11	2	3	3	–	–	–	–
Pittsfield,	27,932	8	1	2	2	–	–	–	–
Brookline,	26,674	5	–	1	1	–	–	–	–
Gloucester,	26,011	2	1	–	–	–	–	–	–
North Adams,	22,150	8	2	2	1	1	–	–	–
Northampton,	21,075	6	0	2	1	1	–	–	–
Chicopee,	21,049	4	1	1	–	–	–	–	–
Medford,	20,921	6	–	3	1	1	1	–	–
Beverly,	16,386	5	1	1	1	–	–	–	–
Leominster,	16,030	4	1	1	1	–	–	–	–
Hyde Park,	15,609	1	0	–	–	–	–	–	–
Melrose,	15,459	1	0	–	–	–	–	–	–
Newburyport,	14,834	5	1	–	–	–	–	–	–
Revere,	14,820	1	–	–	–	–	–	–	–
Westfield,	14,750	7	1	5	4	–	–	–	–
Woburn,	14,522	4	1	2	2	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	9	2	2	1	–	–	–	–
Attleborough,	13,913	3	0	–	–	–	–	–	–
Adams,	13,685	3	1	1	–	–	–	–	1
Clinton,	13,105	3	0	–	–	–	–	–	–
Gardner,	13,066	3	1	–	–	–	–	–	–
Milford,	12,722	–	–	–	–	–	–	–	–
Watertown,	12,676	3	0	2	–	1	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	4	1	–	–	–	–	–	–
Weymouth,	11,798	1	0	–	–	–	–	–	–
Framingham,	11,749	4	2	2	1	1	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	1	–	–	–	–	–	–	–
Greenfield,	10,140	1	–	1	1	–	–	–	–

Recapitulation.

Total of reporting towns,	2,366,746	761	233	235	125	45	13	3	5

WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.

DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF FEBRUARY 6, 13, 20 AND 27, 1909.

DISEASE.	Place.	WEEK ENDING—			
		Feb. 6.	Feb. 13.	Feb. 20.	Feb. 27.
Cerebro-spinal meningitis,	Adams,	–	1	–	–
	Holyoke,	–	–	1	–
	Lowell,	–	–	–	1
	Lynn,	–	2	–	–
	New Bedford,	–	–	–	1
	No. Adams,	1	–	–	–
	Worcester,	–	1	1	1
Scarlet fever,	Boston,	2	5	2	1
	Cambridge,	–	–	–	1
	Everett,	–	–	1	–
	Lynn,	–	1	–	–
	New Bedford,	–	1	–	–
	Somerville,	–	–	–	1
	Worcester,	–	–	–	1
Whooping cough,	Adams,	1	–	–	–
	Boston,	3	2	1	4
	Brockton,	1	–	2	1
	Cambridge,	–	–	–	1
	Chicopee,	–	–	–	1
	Everett,	1	–	–	–
	Holyoke,	–	1	–	–
	Lowell,	–	1	–	–
	Marlborough,	–	–	–	1
	New Bedford,	–	–	1	1
	Somerville,	–	–	1	–
	Taunton,	1	–	–	–
	Weymouth,	–	1	–	–
	Worcester,	1	–	–	–
Erysipelas,	Boston,	2	2	1	5
	Brockton,	–	1	–	–
	Fall River,	–	–	–	1
	Lowell,	–	–	1	–
	Malden,	–	–	1	–
	No. Adams,	–	–	1	–
	Somerville,	1	–	–	–
	Springfield,	–	1	–	–
	Worcester,	–	–	1	–
Meningitis, other than cerebro-spinal.	Malden,	–	–	1	–
	Milford,	–	–	1	–
	Waltham,	–	–	1	–
	Watertown,	–	–	–	1

DISEASE.	Place.	Week ending — Feb. 6.	Feb. 13.	Feb. 20.	Feb. 27.
Tuberculosis other than pulmonary.	Boston,	2	3	1	1
	Cambridge,	–	1	–	2
	Quincy,	–	–	1	–
Influenza,	Adams,	–	2	–	–
	Boston,	–	1	–	2
	Cambridge,	1	–	–	–
	Medford,	–	1	–	–
	No. Adams,	1	–	1	–
	Springfield,	–	1	1	–
	Westfield,	–	–	–	1
Smallpox,	New Bedford,	1	–	–	–

WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

Cases of Infectious Diseases reported during the Weeks of February 6, 13, 20 and 27, 1909.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending — Feb. 6.	Feb. 13.	Feb. 20.	Feb. 27.
Diphtheria,	167	161	152	113
Measles,	401	436	407	502
Scarlet fever,	165	143	182	174
Typhoid fever,	21	17	15	20
Tuberculosis, pulmonary,	132	112	141	130
Cerebro-spinal meningitis,	–	1	1	2
Whooping cough,	106	149	68	38
Varicella,	68	107	55	68
Erysipelas,	–	3	1	2
Mumps,	5	4	12	1
Meningitis other than cerebro-spinal,	1	–	–	–
Ophthalmia neonatorum,	1	1	1	1
Anterior poliomyelitis,	–	1	–	–
Tuberculosis other than pulmonary,	–	1	–	1
Smallpox,	1	–	–	1
Tracoma,	1	–	–	–
Tetanus,	–	–	1	–
Scabies,	–	–	1	–

MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of February, 1909: —

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Baking powder,	1	–	1	Meat products: —			
Butter,	9	–	9	Beef extract,	1	–	1
Cheese,	4	–	4	Canned meats,	6	–	6
Cider,	1	1	2	Hamburg steak,	4	1	5
Cocoa,	3	–	3	Head cheese,	1	–	1
Confectionery,	1	–	1	Lambs' tongues,	1	–	1
Condensed milk,	3	–	3	Sausages,	16	4	20
Cream,	9	–	9	Tripe,	3	–	3
Drugs,	64	15	79	Milk,	175	32	207
Flavoring extracts: —				Olive oil,	32	18	50
				Pickles,	1	–	1
Lemon,	–	1	1	Proprietary foods,	2	2	4
Peppermint,	–	2	2	Salad dressing,	1	–	1
Vanilla,	2	1	3	Salad oil,	2	–	2
Wintergreen,	–	1	1	Shrimp,	1	1	2
Honey,	5	–	5	Spices,	13	–	13
Jams, jellies and preserves.	6	1	7	Syrup,	1	–	1
				Table sauces,	5	–	5
Lard,	2	–	2	Vinegar,	56	29	85
Malt extract,	1	–	1				
Maple sugar,	3	–	3	Total,	436	109	545
Maple syrup,	1	–	1				

The samples of drugs found to be adulterated were: olive oil, spirit of camphor, spirit of peppermint and several proprietary medicines.

The cities and towns in which samples were collected, were: Attleborough, Ayer, Beverly, Boston, Brockton, Brookline, Cambridge, Chicopee, Danvers, Dracut, Dunstable, Fall River, Gloucester, Haverhill, Holyoke, Hyde Park, Lawrence, Lexington, Lowell, Melrose, North Attleborough, North Andover, Pittsfield, Reading, Salem, Springfield, Taunton, Wakefield, Waltham, Watertown, West Springfield, Woburn and Worcester.

PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING TO FOOD AND DRUGS.

Twenty-three convictions were secured during the month of February, 1909, for selling adulterated food, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	Edward C. Hall,	Watertown,	Cider.[1,2]
2	George Tomassetti,	Watertown,	Cider.[1,2]
3	Daniel A. Neylon,	Springfield,	Cream.[3]
4	Archibald F. Blair,	Roxbury,	Hamburg steak.[1]
5	John F. Coleman,	Boston,	Hamburg steak.[1,2]
6	David R. Grewer,	Roxbury,	Hamburg steak.[1]
7	Thos. F. Grinshaw,	Roxbury,	Hamburg steak.[1]
8	George W. Gilbert,	Roxbury,	Hamburg steak.[1]
9	Israel Mostowich,	Roxbury,	Hamburg steak.[1]
10	Joseph Pellman,	Roxbury,	Hamburg steak.[1]
11	Elbridge A. Pickard,	Roxbury,	Hamburg steak.[1]
12	Geo. W. Scott,	Roxbury,	Hamburg steak.[1]
13	Bernard I. Siegel,	Roxbury,	Hamburg steak.[1]
14	Frank Steeves,	Roxbury,	Hamburg steak.[1]
15	Alfred Charron,	Easthampton,	Milk.[4]
16	John P. Dowling,	Pittsfield,	Milk.[5]
17	John P. Dowling,	Pittsfield,	Milk (total solids, 12).
18	George Dufton,	Andover,	Milk (total solids, 11 20).
19	Wm. L. Peabody,	Dracut.	Milk (total solids, 11.70).
20	Varnum B. Richardson,	Methuen,	Milk (total solids, 10.94).
21	Jabez R. Summersgill,	Lawrence,	Milk (total solids, 7.47).[5]
22	James F. Torrey,	Pittsfield,	Milk.[5]
23	James F. Torrey,	Pittsfield,	Milk (total solids, 11.80).

[1] Contained a preservative.
[2] Appealed.
[3] Contained sugar and calcium suerate.
[4] Skimmed; can not marked.
[5] Watered.

Fines imposed, $534.

LIST OF ADULTERATED OR IMPROPERLY LABELLED FOODS, ETC., FOR FEBRUARY, 1909.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
9137	"Wilco" brand preserved plums.	Williams Bros. Company, Detroit, Mich.,	Contained benzoic acid.
182 N	Milk,	Frank Chapman, Hollis, N. H.,	Total solids, 11.24 per cent.; contained added water.
184 N	Milk,	Frank Chapman, Hollis, N. H.,	Total solids, 12.00 per cent.; contained added water.
186 N	Milk,	Frank Chapman, Hollis, N. H.,	Total solids, 11 38 per cent.; contained added water.
9145 P	Olive oil,	Olio D'Oliva, Lucca Mulino Brand,	Contained cotton-seed oil.
9241 P	Olive oil,	Olio D'Oliva Sopraffino, F. Ferrucci, Lucca Toscana, Italy.	Contained cotton-seed oil.
9261 P	Olive oil,	Olio Soprafino Garantito Fracescani Brand,	Contained cotton-seed oil.
9007 P	Extract of peppermint,	Hatch Extract Company, Wakefield, Mass.,	Low in oil.
9009 P	Extract of peppermint,	Gilt Edge Brand, Portland, Me.,	Low in oil.
9011 P	Spirit of peppermint,	W. B. Southworth, 196 Pleasant Street, Malden, Mass.,	42.1 per cent. U. S. P. strength.
304 N	Caff.-Analid headache powders.	George H. Hill, Page's Block, Ayer, Mass.,	Both contained acetanilid; percentage of ingredients not marked on main label.
9067 P	Caff.-Analid headache powders.	George H. Hill, Page's Block, Ayer, Mass.,	Both contained acetanilid; percentage of ingredients not marked on main label.
9179 P	White Pine Expectorant with Tar.	George A. Miller, Cambridge, Mass.,	Contained alcohol; percentage not marked on main label.
9213	Az-ma-Syde,	Asthma Remedy and Manufacturing Company, Boston, Mass.	Contained cocaine.

INSPECTION OF DAIRIES.

During the month of February, 1909, 144 dairies were examined in the following places: —

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number to which Letters were sent.	Per Cent.
Dracut,	12	2	16.67	10	83.33
Second inspection,	40	12	30.00	28	70.00
Everett,	–	–	–	–	–
Fourth inspection,	1	–	–	1	100.00
Harvard,	5	1	20.00	4	80.00
Second inspection,	24	11	45.83	13	54.17
Littleton,	–	–	–	–	–
Second inspection,	1	–	–	1	100.00
Third inspection,	3	2	66.67	1	33.33
Lowell,	1	1	100.00	–	–
Second inspection,	14	5	35.71	9	64.29
Princeton,	–	–	–	–	–
Second inspection,	1	–	–	1	100.00
Tewksbury,	5	5	100.00	–	–
Second inspection,	27	15	55.56	12	44.44
Tyngsborough,	6	2	33.33	4	66.67
Second inspection,	3	3	100.00	–	–
Westford,	–	–	–	–	–
Third inspection,	1	–	–	1	100.00

Total number of dairies examined,	144
Number found to be free from objectionable conditions,	59
Number to which letters were sent,	85
Total number of conditions to which attention was called,	297
Percentage of dairies which passed inspection,	40.97

The names of the owners of dairies found to be worthy of commendation follow: —

Dracut.

Beal, Benjamin [1,2]
Bryant Bros.[1,2]
Coburn, R. D.[1,2]
Crosby, F. L.[1]
Fox, Estate of Fred A.[1]
Long, Henry
Maille, J. A.[1]
Peabody, I. W.[1,2]
Peavey, N. L.[1]
Rhomberg, Reunold [1]
Richardson, Almon [1,2]
Shaw, Mark
Stevens, Estate of Edward A. [1,2]
Whittier Bros.[1]

Harvard.

Bryant, A. W.[1]
Cobb, George E.
Cushman, Mrs. A.[1,2]
Hapgood, J. Gardner [1,2]
Harvard Town Farm [1]
Hussey, C. W.[1]
Parker, A. D.[1]
Parker, N. F.[1,2]
Rockwell, Albert [1]
Scales, Mrs. R. P.[1,2]
Stone, Howard [1]
Wing, H. A.[1,2]

Littleton.

Sanderson, George W.[3]
Whitcomb, J. H. D.[3]

[1] Second inspection. [2] Reported favorably on first inspection as well. [3] Third inspection.

Lowell.

Bean, A. J.[1,2]
Edwards, James
Horr, Albert M.[1]
Hull, Kate F.[1,2]
Peirce, H. M.[1]
Roark, James S.[1,2]

Tewksbury.

Andersen, Axel [1]
Battles, Charles M.[1,2]
Brutt, B. W.[1]
Carter, F. J.[1,2]
Chandler, Miss Hannah [1,2]
French, Charles
French, E. H.[1]
French, John F.[1]
Haynes, Frank [1]
Hood, C. I.[1,2]
King, B.
McCausland, Robert
Osterman, Aaron [1]
Parsons, C. W.[1]
Pillsbury, H. W.[1,2]
Rogers, David [1]
Sperry, Eben [1]
Stevens, B.
Tewksbury Town Farm [1]
Trull, George

Tyngsborough.

Blodgett, H. N.
Cady, Harry
Page, D. L.[1]
Upton, H. H.[1]
Williams, David J.[1]

THE INFANTILE MORTALITY OF BOSTON DURING THE PERIOD JUNE 1 TO NOV. 30, 1907.[3]

By Donald Gregg, M.D.

On June 1, 1907, was undertaken an investigation which was to cover as completely as possible the entire infantile mortality of the city of Boston for the six months next ensuing, with especial reference to preventable causes and the influence of the mode of feeding and the character of the food. Through the courtesy of the board of health, access was granted to the daily returns of deaths, from which the necessary data as to age and place of death and other facts were derived. As soon as possible after the cases to be investigated were reported (those of infants under one year of age), the recorded residences or institutions were visited and the information desired obtained at first hand, from the mother or from the attending physician or other person having it.

During the whole period, in but four cases in which the mode of feeding could have been a factor was it impossible to obtain the required data, and then only because of removal to places unknown to neighbors. In a few cases of abandonment of infants at birth no facts were obtainable; but these cases may be disregarded so far as this in-

[1] Second inspection.
[2] Reported favorably on first inspection as well.
[3] Reprinted in part from the Thirty-ninth Annual Report of the State Board of Health of Massachusetts.

vestigation is concerned, inasmuch as these victims were fed neither naturally nor artificially.

In the results tabulated below, the figures do not correspond exactly with the official records, since in a number of instances incorrect ages were reported.

The number of cases reported and investigated was 1,315, divided by months as follows: —

June,	147
July,	173
August,	355
September,	277
October,	220
November,	143

Conclusions.

The 1,315 infants that died in Boston during the six months may be grouped under five headings: —

1. Those who were predestined to die because of some congenital defect (parental weakness or parental sickness, prematurity, malformation, or obstetrical difficulty).

2. Illegitimate, and hence not welcome.

3. Abandoned, although legitimate, the parents being habitual drunkards or in extremely poor circumstances.

4. Those who acquired the common communicable diseases, as measles, whooping cough, etc.

5. Those improperly fed, either with foods naturally unsuited to infants' stomachs, or with polluted (dirty) milk, containing the common and usual exciting causes of that group of digestive diseases known generally as cholera infantum, but more properly as epidemic diarrhœa.

A reduction in the mortality due to improper feeding will take place only when physicians, nurses, mothers and the general public understand the importance of cleanliness of the milk supply from the moment of its production to that of its consumption. That 740 babies died in Boston during the six months, of preventable gastro-intestinal diseases due to improper feeding, is proof of the need of a more wholesome milk supply.

INFANT MORTALITY AND ITS INTIMATE RELATION WITH THE MILK SUPPLY.[1]

Of the 3,058 deaths reported from all causes, 598 were in children under five years of age, and of these, 428 were under one year of age; 649 of the total deaths were in persons over seventy years of age.

The accompanying table shows for two periods of ten years each the deaths in children under one year of age by months and the deaths in persons over seventy years of age by years. We did not inquire why there is an increase in the number of deaths over seventy years of age, because most of us desire a long life. We did inquire why children under one year of age died so much more frequently in July and August during the first period, and now it is pertinent to inquire why children under one year of age die in larger numbers in July and August than they do in May or June.

If the deaths under one year of age are scanned for the past few years, it will be noted that in 1904 there began to be a sharp rise in the deaths under one year of age, this rise was followed by another sharper rise in 1905, and that for the past three years the deaths in children under one year of age have not found their former level. During these years the price of all commodities, including food stuffs, has materially advanced, and during these years the agitation for an icing clause in the milk ordinance was being carried on. In 1907, after defeats and postponements of that clause in the milk ordinance, the rise in the bacterial content of milk was greater than that of any period which we have known since systematic milk examinations were undertaken in this city. The deaths in little children thus have a distinct relation to the cost of living and to the city's willingness to furnish them clean, cold milk.

Thousands of cattle in this vicinity provide milk for the people in Rochester of whom 20,000 are children under five years of age. Among the men who produce and handle this milk there is neither adequate education nor training. The milkman deals in the most perishable of foods. The milkman acquires a license without examination, by a simple declaration and the payment of a dollar or two: but the man who cuts your corns, shaves you, attends you in sickness or buries your dead must pass an examination before acquiring a license. The milkman knows nothing of the underlying principles of even the simplest rules of cleanliness, yet he produces and purveys the most perishable of foods.

[1] Extract from the annual report of George W. Goler, M.D., Health Officer of the city of Rochester, N.Y. 1907.

When will we in America begin to realize the necessity for adequate attention to the milk supply? Abroad they have begun to understand the relation of milk to the baby. They have found, as in Berlin, for instance, that in 1895 forty-five per cent. of their infants were breast fed, while in 1905 less than thirty-three per cent. of their infants were breast fed. In America less than twenty-five per cent. of mothers in affluent circumstances are able to nurse their children. They are thus compelled to fall back upon the cow, — to make their babies parasites upon a four-footed board-faced animal, who may furnish excellent food for a calf, but very indifferent food for a human being. Even at best, cow's milk is poor food for a human baby. It has a fat, casein and sugar content different from human milk. The only way to make cow's milk fit for a human baby is to feed it into the nursing mother.

For these and other reasons all people should join in protecting the milk supply. Physicians should educate the public, establish infants' milk depots throughout the city, especially in connection with hospitals and medical schools, where physicians, students and nurses may learn the value of good, clean milk in infant and invalid feeding. Now, as in the past, the milk supply of hospitals is notoriously bad. Why do they pay less attention to their milk than to their drugs? The importance of a milk diet for the sick is fairly well understood, but of how much greater importance is milk as a diet for infants. Of 144 infants who died in Rochester of gastro-intestinal diseases during July, August and September, but 22 were breast fed. In all cities bottle-fed infants greatly exceed those who are breast fed. The baby needs clean milk. How many cities have clean milk, — milk that can be trusted as food for infants? How many cities compel dealers to ice their milk, so that it may not swarm with bacteria and the soluble filth which most of it contains? The evident filth you know is retained on the strainer cloth, while the soluble filth goes through into the milk. But eleven cities in this whole country have ordinances which compel the dealer to keep milk cold; these are New York, Boston, Brockton, Los Angeles, Detroit, Cleveland, Cincinnati, St. Louis, St. Paul, Minneapolis and Rochester. Nearly every city in the country is feeding milk to its babies from tuberculous cattle, and then asking the State to provide sanatoria for the children who have become tubercular from drinking the milk of tuberculous cows. The cities that have ordinances, and enforce them, against milk from tuberculous cows, could be counted on the fingers of a badly maimed hand. What are we going to do for the problems which these questions suggest?

Will we educate the producer by establishing for him a model farm, where he may learn how to produce milk in a modern and safe way?

Will we educate the retailer by providing for him a model milk room in connection with our health departments, where he may have before him a demonstration plant that he may readily see and understand? Will we put in our parks a model dairy and milk room, and let our people take their babies to a nursery pavilion in its neighborhood, where they may see what it means to make clean milk? When we have done these things, let us pass adequate laws and ordinances, and then enforce them. Have milk delivered cold from tuberculin-tested cattle. Be as proud of the milk department of your city as you would of its fire department. Don't cook milk and manure, and call it pasteurized milk. Uncooked milk has a restraining power for those organisms found in milk, but heat this milk, pasteurize it, and the resisting power is lost. Pasteurize milk, and more care is required, because the germicidal or resisting power that existed in it as raw milk has been lost. The danger of feeding children infected pasteurized milk is a grave danger, and may be followed by a train of symptoms serious and even fatal.

We grow grains, grasses, fruits and flowers, and we cultivate and weed them. What are we doing for our children? Are we cultivating them? Are we doing for them what the agriculturist does for grasses, fruits and flowers? Are we even in their formative state giving them decent food?

REPORT OF THE STATE BOARD OF HEALTH UPON THE SANITARY CONDITION OF THE MERRIMACK RIVER.

[Under the Provisions of Chapter 114 of the Resolves of 1908.]

To the General Court of Massachusetts.

In accordance with chapter 114 of the Resolves of 1908, the State Board of Health makes the following report upon the sanitary condition of the bed, banks and waters of the Merrimack River and of the streams tributary thereto. No appropriation was made for the proposed investigation, and it has been made with the help of the general funds of the Board and those for the examination of sewer outlets, with the results contained in the appended report of the chief engineer of the Board. The facts therein are made a part of this report.

The river as it enters the State from New Hampshire has on its main line and branches received sewage from 180,000 people, together with large manufacturing wastes. The resulting pollution, as indicated by the amount of albuminoid ammonia, has in the past twenty years increased about 40 per cent.; but, as in the early years of this period

the flow of water in the river was greater than usual and in the past few years has been less, ending with the driest year of the period, the actual increase in pollution is not as much as 40 per cent. The pollution of the river above Lawrence has in the same time increased at about the same rate. Above Haverhill observations are limited to the past ten years, in which the increase in percentage per year has been about the same as that above Lawrence.

For the past few years the pollution above Lawrence has been 35 per cent. more than that above Lowell, and the pollution above Haverhill has been 31 per cent. more than that above Lawrence, while the increase in passing Haverhill is about 7 per cent.

Farther down the river the water is less polluted, so that, entering the State with a certain amount of pollution, this pollution is, where greatest, increased about 90 per cent. by passing the cities of Lowell, Lawrence and Haverhill.

At present this stream of water is not in a condition to be injurious to the public health, and by proper regulation it may be kept many years, perhaps generations, free from danger.

There are, however, many localities in each of these cities, near the outlet of sewers, where the stream is locally polluted, the sewage not being disseminated through the stream; and where the bed and banks at night and on Sundays, when the mills are not running, and at low tide near the lower city, are exposed, coated with the refuse of sewage and of some manufacturing wastes. At these places the conditions are injurious to the health of those living or working near.

These conditions may be obviated in general by extending the sewer by an iron pipe, smaller than the sewer, but large enough to convey the ordinary sewage, to beyond the edge of the stream at the lowest stage and discharging under water, so that a clean stream of water may continually flow between the shore and the outlet. In this way the sewage becomes diluted by the water into which it is discharged and the shore is kept clean.

Of the manufacturing wastes the most obvious and the one that causes the most complaint upon this river is that resulting from the scouring of wool. This process of washing and discharging the effluent containing large quantities of grease into the river results in a grease-covered shore and bed for a long distance down stream. The grease associates with and holds other objectionable matter, and while we cannot say that it has up to this time been injurious or dangerous to the public health, it has become very disagreeable. The boatmen at Haverhill complain of the black grease adhering to their boats. It is at

present a very disagreeable addition to the river, and may become injurious to the public health.

In other countries, and to some extent in this, the grease, which is the objectionable element of the effluent, is removed and made into valuable articles of commerce.

It would probably be no great hardship if the scourers of wool were required to keep the grease out of the river. If this were done the appearance of the river would be very much improved, and the ground for much of the complaint in regard to its present condition removed.

The pollution entering this river from beyond the State renders it impracticable to include it with those rivers used for water supplies; but the local nuisances and the increasing pollution require that more complete regulation be applied to this river, and to this end the Board recommends that section 123 of chapter 75 of the Revised Laws be modified to read as follows: —

Section 123. The provisions of the five preceding sections, and of so much of sections one hundred and twelve to one hundred and seventeen inclusive as refer to domestic water supplies, shall not apply to the Merrimack or Connecticut rivers, nor to so much of the Concord river as lies within the limits of the city of Lowell, nor to springs, streams, ponds or water courses over which the metropolitan water board has control.

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WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS OF MORE THAN 10,000 POPULATION.

WEEK ENDING MARCH 6, 1909.

CITIES AND TOWNS.	Population.[1] Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	232	55	98	39	32	4	–	1
Worcester,	136,476	33	2	14	8	4	1	–	–
Fall River,	106,486	51	14	22	12	1	1	–	–
Cambridge,	102,112	33	7	13	8	4	–	–	–
Lowell,	96,380	40	13	16	13	2	1	–	–
New Bedford,	85,516	24	12	10	7	1	–	–	–
Lynn,	84,623	23	4	2	–	1	–	–	–
Springfield,	84,237	22	5	4	2	–	2	–	–
Lawrence,	78,000	27	10	9	5	3	–	1	–
Somerville,	76,049	27	7	7	4	1	–	–	–
Brockton,	55,039	15	6	4	1	–	–	–	2
Holyoke,	53,590	22	8	13	7	3	1	–	1
Malden,	41,941	5	–	2	2	–	–	–	–
Chelsea,	40,080	8	2	–	–	–	–	–	–
Newton,	39,642	13	2	6	3	–	1	1	–
Salem,	39,019	13	2	2	2	–	–	–	–
Haverhill,	38,362	12	2	3	1	1	1	–	–
Fitchburg,	34,263	9	4	2	1	1	–	–	–
Everett,	33,597	8	2	–	–	–	–	–	–
Quincy,	31,937	8	1	1	–	1	–	–	–
Taunton,	30,967	17	2	8	4	1	–	–	–
Waltham,	28,761	16	4	5	3	1	–	–	1
Pittsfield,	27,932	7	2	5	4	1	–	–	–
Brookline,	26,674	4	–	–	–	–	–	–	–
Gloucester,	26,011	3	–	1	–	1	–	–	–
North Adams,	22,150	5	–	2	2	–	–	–	–
Northampton,	21,075	5	0	1	1	–	–	–	–
Chicopee,	21,049	11	3	4	3	1	–	–	–
Medford,	20,921	7	3	2	1	–	1	–	–
Beverly,	16,386	4	–	2	1	1	–	–	–
Leominster,	16,030	–	–	–	–	–	–	–	–
Hyde Park,	15,609	5	1	–	–	–	–	–	–
Melrose,	15,459	3	0	1	1	–	–	–	–
Newburyport,	14,834	4	1	1	1	–	–	–	–
Revere,	14,820	2	1	1	–	–	–	–	–
Westfield,	14,750	5	–	–	–	–	–	–	–
Woburn,	14,522	5	1	–	–	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	7	2	–	–	–	–	–	–
Attleborough,	13,913	3	1	2	–	1	–	–	–
Adams,	13,685	2	1	1	–	–	–	–	–
Clinton,	13,105	6	1	3	1	1	1	–	–
Gardner,	13,066	3	1	1	1	–	–	–	–
Milford,	12,722	4	1	3	2	–	–	–	–
Watertown,	12,676	4	2	3	1	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	5	1	–	–	–	–	–	–
Weymouth,	11,798	2	1	–	–	–	–	–	–
Framingham,	11,749	5	–	3	2	1	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	1	–	–	–	–	–	–	–
Greenfield,	10,140	3	–	1	–	–	–	–	–
Recapitulation									
Total of reporting towns,	2,363,438	773	187	278	143	64	14	2	5

[1] The populations were estimated upon the rate of growth from 1900 to 1905. Those of Taunton, Gloucester, North Adams and Clinton were allowed to stand as in 1905, having shown no increase during the five-year period. The gain in the population of Lowell is due to the annexation of a part of the town of Tewksbury. The population of Lawrence by the census of 1905 was 70,050, but, owing to the building of the new Wood and Arlington mills, an increase of about 8,000 is estimated by the Lawrence board of health, or 78,000.

WEEK ENDING MARCH 13, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever	Measles.
Boston,	624,491	277	67	112	44	28	7	–	5
Worcester,	136,476	52	16	16	10	4	–	–	–
Fall River,	106,486	40	22	18	9	–	–	–	–
Cambridge,	102,112	23	7	13	6	4	1	–	–
Lowell,	96,380	29	10	11	9	2	–	–	–
New Bedford,	85,516	37	8	15	7	7	–	–	–
Lynn,	84,623	36	8	6	–	4	–	–	–
Springfield,	84,237	30	8	10	5	–	1	–	–
Lawrence,	78,000	27	8	12	8	2	1	–	–
Somerville,	76,049	18	3	6	3	1	1	–	–
Brockton,	55,039	11	4	3	1	–	–	–	1
Holyoke,	53,590	21	8	13	9	3	–	–	–
Malden,	41,941	10	2	4	–	–	1	1	–
Chelsea,	40,080	15	3	2	–	1	–	1	–
Newton,	39,642	6	3	1	1	–	–	–	–
Salem,	39,019	13	2	5	5	–	–	–	–
Haverhill,	38,362	14	7	5	3	2	–	–	–
Fitchburg,	34,263	13	4	4	2	1	–	–	–
Everett,	33,597	8	1	–	–	–	–	–	–
Quincy,	31,937	8	2	1	1	–	–	–	–
Taunton,	30,967	10	1	3	1	1	–	–	–
Waltham,	28,761	13	0	7	4	3	–	–	–
Pittsfield,	27,932	10	2	2	–	2	–	–	–
Brookline,	26,674	6	2	2	2	–	–	–	–
Gloucester,	26,011	5	–	–	–	–	–	–	–
North Adams,	22,150	7	3	3	1	2	–	–	–
Northampton,	21,075	15	6	7	4	3	–	–	–
Chicopee,	21,049	7	4	2	2	–	–	–	–
Medford,	20,921	10	1	4	4	–	–	–	–
Beverly,	16,386	4	2	–	–	–	–	–	–
Leominster,	16,030	5	3	2	–	–	–	–	–
Hyde Park,	15,609	4	0	1	–	1	–	–	–
Melrose,	15,459	1	0	–	–	–	–	–	–
Newburyport,	14,834	10	–	3	2	1	–	–	–
Revere,	14,820	5	2	3	3	–	–	–	–
Westfield,	14,750	5	3	4	3	–	–	1	–
Woburn,	14,522	7	2	1	1	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	5	0	–	–	–	–	–	–
Attleborough,	13,913	8	1	2	–	2	–	–	–
Adams,	13,685	4	2	–	–	–	–	–	–
Clinton,	13,105	3	1	1	–	1	–	–	–
Gardner,	13,066	9	1	1	–	–	–	–	–
Milford,	12,722	3	1	3	–	2	–	–	–
Watertown,	12,676	3	0	1	–	1	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	1	–	–	–	–	–	–	–
Weymouth,	11,798	3	1	2	1	1	–	–	–
Framingham,	11,749	6	1	2	1	1	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	4	–	–	–	–	–	–	–
Greenfield,	10,140	2	–	–	–	–	–	–	–

Recapitulation.

Total of reporting towns,	2,379,468	863	232	313	152	80	12	3	6

WEEK ENDING MARCH 20, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever	Measles.
Boston,	624,491	243	67	93	48	20	4	–	2
Worcester,	136,476	43	8	11	6	3	1	–	–
Fall River,	106,486	35	16	20	12	2	1	–	–
Cambridge,	102,112	33	10	13	5	7	1	–	–
Lowell,	96,380	38	15	12	9	3	–	–	–
New Bedford,	85,516	29	11	11	7	4	–	–	–
Lynn,	84,623	25	0	2	–	–	1	–	–
Springfield,	84,237	37	6	6	3	–	–	2	–
Lawrence,	78,000	44	21	17	10	5	2	–	–
Somerville,	76,049	25	5	11	6	2	2	–	–
Brockton,	55,039	8	2	1	1	–	–	–	–
Holyoke,	53,590	18	8	3	1	2	–	–	–
Malden,	41,941	12	2	2	–	1	–	–	–
Chelsea,	40,080	13	1	–	–	–	–	–	–
Newton,	39,642	15	3	5	3	–	–	–	–
Salem,	39,019	17	2	6	6	–	–	–	–
Haverhill,	38,362	13	4	8	4	3	1	–	–
Fitchburg,	34,263	–	–	–	–	–	–	–	–
Everett,	33,597	6	1	–	–	–	–	–	–
Quincy,	31,937	9	1	2	–	1	–	–	–
Taunton,	30,967	14	1	5	2	3	–	–	–
Waltham,	28,761	7	–	3	2	1	–	–	–
Pittsfield,	27,932	6	2	3	3	–	–	–	–
Brookline,	26,674	11	–	4	2	–	–	–	–
Gloucester,	26,011	8	2	1	–	1	–	–	–
North Adams,	22,150	13	6	2	1	–	–	–	–
Northampton,	21,075	6	1	1	1	–	–	–	–
Chicopee,	21,049	6	1	2	1	–	–	–	–
Medford,	20,921	9	–	2	–	2	–	–	–
Beverly,	16,386	4	–	2	1	–	–	1	–
Leominster,	16,030	3	1	1	–	1	–	–	–
Hyde Park,	15,609	5	2	–	–	–	–	–	–
Melrose,	15,459	5	1	–	–	–	–	–	–
Newburyport,	14,834	4	–	3	1	1	1	–	–
Revere,	14,820	2	–	–	–	–	–	–	–
Westfield,	14,750	5	–	–	–	–	–	–	–
Woburn,	14,522	7	1	–	–	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	6	0	1	–	1	–	–	–
Attleborough,	13,913	3	1	1	–	–	–	–	–
Adams,	13,685	3	1	–	–	–	–	–	–
Clinton,	13,105	3	2	–	–	–	–	–	–
Gardner,	13,066	4	2	–	–	–	–	–	–
Milford,	12,722	–	–	–	–	–	–	–	–
Watertown,	12,676	3	–	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	1	1	1	–	1	–	–	–
Weymouth,	11,798	1	0	1	–	1	–	–	–
Framingham,	11,749	4	1	–	–	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	2	–	–	–	–	–	–	–
Greenfield,	10,140	3	–	1	1	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,232,483	811	209	257	136	65	14	3	2

WEEK ENDING MARCH 27, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	248	75	112	53	25	11	–	5
Worcester,	136,476	35	7	16	11	5	–	–	–
Fall River,	106,486	43	15	23	11	1	–	–	–
Cambridge,	102,112	29	9	14	4	7	–	–	–
Lowell,	96,380	41	8	12	7	2	1	–	–
New Bedford,	85,516	23	11	10	9	1	–	–	–
Lynn,	84,623	20	1	1	–	1	–	–	–
Springfield,	84,237	18	2	9	5	2	–	–	–
Lawrence,	78,000	25	10	10	5	1	1	–	2
Somerville,	76,049	20	2	4	1	2	–	–	–
Brockton,	55,039	19	6	7	2	3	–	–	2
Holyoke,	53,590	22	9	9	6	1	–	–	–
Malden,	41,941	7	2	2	2	–	–	–	–
Chelsea,	40,080	9	1	1	–	1	–	–	–
Newton,	39,642	10	4	1	1	–	–	–	–
Salem,	39,019	9	3	4	2	2	–	–	–
Haverhill,	38,362	11	1	6	4	2	–	–	–
Fitchburg,	34,263	9	–	1	1	–	–	–	–
Everett,	33,597	7	2	1	–	–	–	–	–
Quincy,	31,937	9	1	–	–	–	–	–	–
Taunton,	30,967	16	3	8	5	2	–	–	–
Waltham,	28,761	13	2	4	2	1	–	–	–
Pittsfield,	27,932	9	2	4	2	2	–	–	–
Brookline,	26,674	5	–	–	–	–	–	–	–
Gloucester,	26,011	8	1	1	–	1	–	–	–
North Adams,	22,150	7	1	–	–	–	–	–	–
Northampton,	21,075	3	1	–	–	–	–	–	–
Chicopee,	21,049	8	3	1	1	–	–	–	–
Medford,	20,921	5	–	2	2	–	–	–	–
Beverly,	16,386	3	1	–	–	–	–	–	–
Leominster,	16,030	3	1	1	–	1	–	–	–
Hyde Park,	15,609	1	–	1	1	–	–	–	–
Melrose,	15,459	4	0	1	1	–	–	–	–
Newburyport,	14,834	4	–	–	–	–	–	–	–
Revere,	14,820	7	2	–	–	–	–	–	–
Westfield,	14,750	3	1	–	–	–	–	–	–
Woburn,	14,522	3	0	1	–	1	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	8	2	3	2	–	–	–	–
Attleborough,	13,913	8	3	1	–	1	–	–	–
Adams,	13,685	–	–	–	–	–	–	–	–
Clinton,	13,105	4	0	2	–	1	–	–	–
Gardner,	13,066	5	1	–	–	–	–	–	–
Milford,	12,722	–	–	–	–	–	–	–	–
Watertown,	12,676	1	0	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	5	3	1	–	–	–	–	–
Weymouth,	11,798	6	0	3	1	–	1	–	–
Framingham,	11,749	–	–	–	–	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	3	–	–	–	–	–	–	–
Greenfield,	10,140	2	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,354,034	758	196	277	141	66	14	–	9

WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.

DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF MARCH 6, 13, 20 AND 27, 1909.

DISEASE.	Place.	WEEK ENDING—			
		Mar. 6.	Mar. 13	Mar. 20.	Mar. 27.
Cerebro-spinal meningitis,	Boston,	1	1	–	–
	Lynn,	–	1	–	–
	Milford,	–	1	–	–
	Newton,	1	–	1	–
	Revere,	1	–	–	–
	Watertown,	1	–	–	–
	Worcester,	–	1	–	–
Scarlet fever,	Boston,	6	3	1	2
	Brookline,	–	–	1	–
	Cambridge,	–	1	–	–
	Everett,	–	–	–	1
	Fall River,	–	–	–	1
	Lynn,	1	1	–	–
	Malden,	–	1	–	–
	New Bedford,	1	–	–	–
	Newton,	–	–	1	–
	Somerville,	–	–	1	1
	Waltham,	–	–	–	1
	Worcester,	1	–	1	–
Whooping cough,	Adams,	1	–	–	–
	Boston,	7	3	2	2
	Brockton,	1	–	–	–
	Cambridge,	–	–	–	1
	Clinton,	–	–	–	1
	Holyoke,	–	1	–	–
	Leominster,	–	1	–	–
	Malden,	–	–	1	–
	New Bedford,	1	–	–	–
	Somerville,	–	1	–	–
	Southbridge,	–	–	–	1
	Watertown,	1	–	–	–
Erysipelas,	Boston,	–	4	1	2
	Cambridge,	1	–	–	1
	Lowell,	–	–	–	1
	New Bedford,	–	1	–	–
	Springfield,	–	1	–	1
	Taunton,	–	–	–	1
	Worcester,	–	1	–	–

DISEASE.	Place.	Week ending — Mar. 6.	Mar. 13.	Mar 20.	Mar. 27.
Tuberculosis other than pulmonary.	Boston,	–	6	–	–
	Brookline,	–	–	1	–
	Cambridge,	–	–	–	1
	Fall River,	–	1	–	–
	Quincy,	–	–	1	–
	Springfield,	–	2	1	–
	Taunton,	1	1	–	–
Meningitis, other than cerebro-spinal.	Malden,	–	1	–	–
	North Adams,	–	–	1	–
Anthrax,	Lynn,	–	–	1	–
Influenza,	Boston,	1	3	3	2
	Fitchburg,	–	1	–	–
	Gardner,	–	1	–	–
	Greenfield,	1	–	–	–
	Leominster,	–	1	–	–
	Springfield,	–	1	–	1
	Weymouth,	–	–	–	1

WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

Cases of Infectious Diseases reported during the Weeks of March 6, 13, 20 and 27, 1909.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending — Mar. 6.	Mar. 13.	Mar. 20.	Mar. 27.
Diphtheria,	124	139	181	166
Measles,	546	447	450	474
Scarlet fever,	190	167	200	156
Typhoid fever,	17	21	23	16
Tuberculosis, pulmonary,	101	175	129	151
Cerebro-spinal meningitis,	4	6	3	2
Whooping cough,	56	56	63	44
Varicella,	42	79	51	43
Erysipelas,	1	–	–	–
Mumps,	15	–	5	7
Meningitis other than cerebro-spinal	–	–	1	–
Ophthalmia neonatorum,	–	–	7	2
Anterior poliomyelitis,	–	–	1	–
Tuberculosis other than pulmonary,	1	–	–	–
Smallpox,	–	2	–	–
Anthrax,	–	1	1	1
Leprosy,	–	–	–	2

MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of March, 1909: —

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Baking powder,	2	1	3	Malt extracts,	2	–	2
Butter,	–	5	5	Maple sugar,	13	5	18
Canned fruit,	1	–	1	Maple syrup,	1	–	1
Canned vegetables,	1	–	1	Meat products: —			
Cheese,	–	1	1	Hamburg steak,	4	1	5
Cider,	3	3	6	Sausages,	11	4	15
Coffee extracts,	3	–	3	Pressed meat,	1	–	1
Confectionery,	2	–	2	Beef extract,	1	–	1
Condensed milk,	5	–	5	Milk,	296	38	334
Cream,	12	1	13	Olive oil,	51	36	87
Drugs,	19	6	25	Pickles,	3	–	3
Flavoring extracts: —				Proprietary foods,	3	13	16
				Salad dressing,	1	–	1
				Spices,	3	–	3
Lemon,	1	1	2	Syrup,	1	–	1
Orange,	1	–	1	Table sauces,	4	–	4
Vanilla,	3	–	3	Vinegar,	14	4	18
Grape juice,	1	–	1				
Jams and jellies,	3	–	3	Total,	466	119	585

The samples of drugs found to be adulterated were: spirit of peppermint, tincture of iodine and proprietary medicines.

The cities and towns in which samples were collected were: Arlington, Boston, Beverly, Braintree, Brookline, Cambridge, Chelmsford, Danvers, Fitchburg, Gloucester, Haverhill, Holyoke, Ipswich, Lawrence, Lexington, Lowell, Lynn, Malden, Medford, Melrose, Middleborough, Milford, Natick, Newburyport, North Andover, Palmer, Peabody, Rockland, Salem, South Framingham, Taunton, Westwood, Winthrop and Woburn.

PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING TO FOOD AND DRUGS.

Twenty convictions were secured during the month of March, 1909, for selling adulterated food, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	Felix Russo,	Boston,	Cider.[1]
2	Morris Goldman,	Boston,	Hamburg steak.[1]
3	Herman H. Hescamp,	Boston,	Hamburg steak.[1]
4	Herman H. Hescamp,	Boston,	Hamburg steak.[1]
5	William D. Halward,	Boston,	Hamburg steak.[1]
6	David Reid,	Boston,	Hamburg steak.[1]
7	Spiros Kanzias,	Dorchester,	Maple sugar.[2]
8	James Paganis,	Ipswich,	Maple sugar.[2]
9	Frank Chapman,	Dunstable,	Milk (total solids, 11.24).[3]
10	Otto Minzner,	Methuen,	Milk (total solids, 11.65).[4]
11	Frank O. Rea,	North Andover,	Milk (total solids, 10.88).
12	Michael Boscuzzo,	Newburyport,	Olive oil.[2]
13	William Canelos,	Ipswich,	Olive oil.[2]
14	Alfonzo Guido,	Boston,	Olive oil.[2]
15	Nicklis Kintgios,	Ipswich,	Olive oil.[2]
16	Joseph Kohn,	Salem,	Olive oil.[2]
17	Michael Kotrosos,	Boston,	Olive oil.[2]
18	Angelo Acerra,	Boston,	Sausage.[1]
19	Valentine Dooley,	Salem,	Sausage.[1]
20	Cro Giordano,	Boston,	Sausage.[1]

[1] Contained a preservative.
[2] Adulterated.
[3] Watered.
[4] Appealed.

Fines imposed, $450.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
9337	Milk,	Edward O. Brown, Gloucester, Mass.,	Total solids, 10 60 per cent.; contained added water.
464 n	Milk,	George H. Gould, Taunton, Mass.,	Total solids, 10.71 per cent.; contained added water.
514 n	Milk,	Edward A. Piper, Ashby, Mass.,	Total solids, 8.32 per cent.; contained added water.
574 n	Milk,	Henry Rich, Milford, Mass.,	Total solids, 11.16 per cent.; contained added water.
576 n	Milk,		Total solids, 10.40 per cent.; contained added water.
q 1760	Milk,	Olin E. Swan, South Framingham, Mass.,	Total solids, 11.56 per cent.; fat, 2.80 per cent.; proteid, 3.23 per cent.; skimmed milk.
9373	Milk,	Chas. H. Peloquin, Marlborough, Mass.,	Total solids, 11.70 per cent.; fat, 2.40 per cent.; proteid, 3.35 per cent.; skimmed milk.
q 1816	Milk,	Jacob A. Dyer, South Braintree, Mass.,	Total solids, 9 68 per cent.; fat, 0.05 per cent.; skimmed milk.
510 n	Milk,	Wm. R. Underhill, Ashby Mass.,	Total solids, 9.80 per cent ; fat, 0.30 per cent.; skimmed milk.
8402	Chionia,	Peacock Chemical Company, St. Louis, Mo.	Contained 18 per cent. alcohol (percentage not stated).
9320	Tincture of iodine,	McGarry & Mellody, Boston, Mass.,	77 per cent. U. S. P. strength.
9321	Tincture of iodine,	William M. Curtis & Co., Boston, Mass ,	79 per cent. U. S. P. strength.
9406	Primo baking powder,	Boston Baking Powder Company, Boston, Mass.,	Phosphate powder; no statement of ingredients.
9239	Elixir De Riga,	M. Strasdowsky,	Contained 37.2 per cent. alcohol (percentage not stated).
q 1825	Bryant's Root Beer Extract.	Michigan Drug Company, Detroit, Mich.,	Contained 4.56 per cent. alcohol (percentage not stated).
q 1827	Hires' Root Beer Extract.	Chas. E. Hires Company, Philadelphia, Pa.,	Contained 6.44 per cent. alcohol (percentage not stated).
q 1828	Indian Root Beer Extract.	Baker Extract Company, Springfield, Mass., and Portland, Me.	Contained 11.76 per cent. alcohol (percentage not stated).
	Dr. Swett's Root Beer Extract.	Dr. Swett's Root Beer Company, Boston, Mass.,	Contained 10.92 per cent. alcohol (percentage not stated).
9287 P.	Olive oil,	Olio Finissimo Re'd' Italia Brand,	Contained cottonseed oil.
9383 P.	Olive oil,	Olio D'Oliva G. Di Trapani Sicilia Italia,	Cottonseed oil.
9397 P.	Olive oil,	Olio D'Oliva Purissimo, Ditt'a R. Antinotti, Produttore A Lucca Genoa, Italy.	Contained cottonseed oil.
9421 P.	Olive oil,	Absolutely Pure Imported Athens Olive Oil, P. Demoris, Newburyport, Mass.	Contained cottonseed oil.

INSPECTION OF DAIRIES.

During the month of March, 1909, 160 dairies were examined in the following places: —

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number to which Letters were sent.	Per Cent.
Acton,	–	–	–	–	–
Third inspection,	1	–	–	1	100.00
Dighton,	–	–	–	–	–
Second inspection,	1	–	–	1	100.00
Dunstable,	1	–	–	1	100.00
Second inspection,	2	1	50.00	1	50.00
Groton,	4	3	75.00	1	25.00
Second inspection,	22	9	40.91	13	59.09
Harvard,	9	2	22.22	7	77.78
Second inspection,	58	16	27.59	42	72.41
Littleton,	–	–	–	–	–
Second inspection,	1	–	–	1	100 00
Third inspection,	1	–	–	1	100.00
Pepperell,	5	3	60.00	2	40.00
Second inspection,	23	14	60.87	9	39.13
Princeton,	2	–	–	2	100 00
Second inspection,	15	9	60.00	6	40.00
Townsend,	4	–	–	4	100.00
Second inspection,	11	10	90.91	1	9.09

Total number of dairies examined,	160
Number found to be free from objectionable conditions,	67
Number to which letters were sent,	93
Total number of conditions to which attention was called,	342
Percentage of dairies which passed inspection,	41.88

The names of the owners of dairies found to be worthy of commendation follow: —

Dunstable.

Tolles, Mrs. Edla [1]

Groton.

Bancroft, General William A.[1, 2]
Benedict, P. J.[1]
Bowles, H. D.[1]
Clough, T. R.[1]
Graves, Joseph [1, 2]
Hawks, J. R.
Lawrence, James
Peabody, William A.[1]
Shattuck, H.[1, 2]
Vining, Miss Floretta [1, 2]
Whitehill, William H.
Woods, W. A.[1]

Harvard.

Anderson, E.
Bigelow, J. R.[1]
Brown, A. M.[1]
Davran, John H.[1]
Dickinson, D. H.[1, 2]
Gale, George G.[1]
Goss, Bliss (The Shakers)
Green, Walter [1]
Hutchinson, A. A.[1, 2]
King, W. E.[1]
Petersen, Peter [1]
Priest, B. J.[1]
Skillings, H. A.[1]
Sprague, C E.[1, 2]
Sprague, Frank [1]
Turner, A. H.[1]
Warner, Mrs. M.[1, 2]
Willard, S. P.[1]

[1] Second inspection. [2] Reported favorably on first inspection as well.

Pepperell.

Adams, G. W.[1, 2]
Bancroft, S. P.[1, 2]
Blood, C. M.[1]
Chase, Edgar
Dennen, C. A.[1]
Dennen, W. F.[1]
Gilson, J. H.[1, 2]
Herrod, W. A.[1, 2]
Hill, Courtney
Legg, W. E. A.[1]
Maynard, J. W.[1, 2]
Pierce, W. E.[1]
Richardson, E. R.[1]
Robbins, George L.
Shattuck, George E.[1, 2]
Smith, George L.[1]
Wright, F. O.[1, 2]

Princeton.

Brooks, W. S.[1]
Bryant, W. H.[1]
Clark, J. W.[1]
Cronin, B.[1]
Crowell, J. A.[1]
Downey, M.[1, 2]
Gates, M.[1]
Olsen, Alfred[1, 2]
Way, Frank[1]

Townsend.

Barber, O. D.[1, 2]
Beckonert, G. H.[1, 2]
Campbell, E.[1]
Kelley, H. L.[1, 2]
Kendall, G. H.[1]
King, G. E.[1]
Scales, A.[1, 2]
Stickney, C. A.[1]
Townsend Town Farm[1]
Whitcomb, G. L.[1]

PROPRIETARY PREPARATIONS ADVERTISED AS UNSALABLE IN JANUARY, 1909.

White Pine Expectorant with Tar. George A. Miller, Pharmacist, 853 Main Street, corner Austin, Cambridge, Mass. (Contains alcohol. Not properly labeled.)

Professor Penney's Body Regulator. Prepared only by Prof. H. C. Penney, 518 Columbus Avenue, Boston, Mass. (No statement of the percentage of alcohol.)

PROPRIETARY PREPARATIONS ADVERTISED AS UNSALABLE IN MARCH, 1909.

(No statement of the percentage of alcohol.)

Elixir of Riga. Russian liquor. M. Strasdowsky.

Dr. Wilson's Wine of Cod Liver Oil with Malt, Wild Cherry and Hypophosphites. The Walker-Rintels Drug Company, 166 Summer Street, opposite South Station, Boston, Mass.

Larkin Root Beer Extract. Larkin Company, pure food chemists. Established 1875. Buffalo, U. S. A.

Rocko-Ryo: Rock and Rye Compound. E. E. Gray Company, distributers, Boston, Mass. Charles L. Richardson & Co., distributers, Boston, Mass.

[1] Second inspection. [2] Reported favorably on first inspection as well.

Horehound, Rock and Rye. Prepared by S. F. Petts & Co., 237 Friend Street, 144 and 148 Canal Street, Boston, Mass.

Hires. (A root beer extract.) Prepared and put up only by The Charles E. Hires Company, Philadelphia, Pa., U. S. A.

Dr. Swett's Root Beer Extract. Prepared by The Dr. Geo. W. Swett Root Beer Company, corner Albany and Harvard streets, Boston.

Indian Root Beer Extract. Prepared by Baker Extract Company. Laboratories, Springfield, Mass., and Portland, Me.

Bryant's Root Beer. (A root beer extract.) The Michigan Drug Company, 26–38 Congress Street, East, Detroit, Mich.

Chionia. Prepared exclusively for physicians' prescriptions. Peacock Chemical Company, St. Louis.

PROPRIETARY PREPARATIONS ADVERTISED AS UNSALABLE DURING 1908.

Mrs. Winslow's Soothing Syrup. The Anglo-American Drug Company, 215–217 Fulton Street, New York City. (Contained morphine in excess of the amount stated on the label.)

Kopp's "Baby's Friend:" The King of Baby Soothers. Mrs. J. A. Kopp, sole proprietor; C. Robert Kopp, manufacturing chemist, York, Pa. (Contained morphine in excess of the amount stated on the label.)

Dr. Coderre's Infants' Syrup (Sirop des Enfants du Dr. Coderre). (No statement of the amount of morphine.)

Chamberlain's Mentholated Codeine. W. H. Chamberlain, 73 Green Street, Boston; 357 Adams Street, Dorchester, Mass. (No statement as to the presence and amount of codeine.)

Robustine. Con Keefe, 8–10 Cambridge Street, Boston. (No statement of the percentage of alcohol.)

Rock, Rye and Honey: the Great French Remedy. Edward Heffernan, sole proprietor, Lynn, Mass. (No statement of the percentage of alcohol.)

Superior Headache Powders. Choate Drug and Chemical Company, manufacturing chemists, Bowdoin Square, Boston. (Incorrect statement of the amount of acetanilid.)

The labels of the following preparations gave no indication as to the presence and amount of acetanilid contained therein: —

Quick Relief Headache Konseals. Henry Adams & Co., pharmacists, Amherst, Mass., and 429 Main Street, Springfield, Mass.

Chamberlain's Headache Powders. W. H. Chamberlain, Ph.G., sole proprietor, 357 Adams Street, corner Packman, Dorchester, Mass.

Caffeline Headache Tablets. W. T. Cummings, pharmacist, 46 Front Street, Winchendon, Mass.

Dr. Davis' Anti-Headache or Half-Hour Headache Healer. Dr. N. C. Davis, Indianapolis, Ind.

"Omega" Headache Tablets. Dodge's Pharmacy, 645 Broadway, corner Chestnut Street, Everett, Mass.

"Funny How Quick" Headache and Neuralgia Cure. "Funny How Quick Company," Box 485, Lynn, Mass.

Headache Powders. A. T. Luscomb, apothecary, 449 Tremont Street, Boston.

Munkley's Improved Headache Powders. Munkley & Co., pharmacists, 507 Tremont Street, corner Berkeley, Boston.

Dr. Paxton's Headache and Neuralgia Cure. Dr. Paxton's Medical Company, Troy, N. Y.

Standard Headache Cura. Made by the Standard Drug Company. Three stores: Hoffman pharmacy, corner Berkeley Street and Columbus Avenue; Falmouth pharmacy, corner Falmouth and Norway streets; Colonial pharmacy, corner Berkeley and Tremont streets, Boston.

The following preparations contained cocaine: —

Celerina. Rio Chemical Company, New York.

A No. 1 Catarrh Cure. Standard Remedy Company, Boston, Mass.

Dr. R. B. Waite's Antiseptic Local Anæsthetic for Painless Operations in All Minor Surgery. The Antidolar Manufacturing Company, Springville, Erie County, N. Y.

As–Ma–Syde. Asthma Remedy and Manufacturing Company, Tremont Temple, Boston, Mass.

Burgundia Coca. The Burgundia-Coca Company. New York, London, Mexico. J. Morningstar, sole agent for the United States and Canada, 48 Park Place, New York.

Cocaine-containing powder, unlabeled.

Cocaine-containing catarrh snuff, unlabeled.

Nichols Compound Kola Cordial. Billings, Clapp & Co., manufacturing chemists, Boston.

The Ruby Catarrh Powder. Standard Remedy Company, Providence, R. I.

PROPRIETARY PREPARATIONS; PROHIBITION OF SALE REMOVED.

The following-named preparations, as now presented to the trade, being no longer in conflict with the provisions of chapter 386 of the Acts of 1906, may be sold at retail: —

Stearns' Wine (Vinum Olei Morrhuae, Stearns). Stearns' Wine of Cod Liver Oil with Peptonate of Iron. Frederick Stearns & Co., manufacturing pharmacists, Detroit, U. S. A., Windsor, Ont., Can.

Chionia. Prepared exclusively for physicians' prescriptions. Peacock Chemical Company, St. Louis.

Celerina. Rio Chemical Company, New York.

Hires. (A root beer extract.) The Charles E. Hires Company, Philadelphia, Pa.

ENFORCEMENT OF THE STATUTES RELATIVE TO THE MANUFACTURE OF CLOTHING IN TENEMENTS AND DWELLINGS.

Revised Laws, chapter 106, section 56, as amended by chapter 238 of the Acts of 1905, and later by section 5, chapter 537 of the Acts of 1907, provides that: —

Every person, firm or corporation hiring, employing or contracting with a member of a family holding a license under this section for the making, altering, repairing or finishing of garments or wearing apparel to be done outside the premises of such person, firm or corporation, shall keep a register of the names and addresses plainly written in English of the persons so hired, employed or contracted with, and shall forward a copy of such register once a month to the state board of health.

The State Inspector of Health of District No. 5 instituted court proceedings against the firm of Smith & Cohen, 9 Friend Street, Boston, on two counts: (1) for giving work to a member of a family in a tenement house who had no license; (2) for not keeping a register of the names of their tenement workers. Conviction was obtained before Judge Wentworth, March 30. The defendants were fined $200, each partner being fined $50 on each of the two counts. They appealed.

THE COMPOSITION OF THE MILK ON SALE IN MASSACHUSETTS.

By Hermann C. Lythgoe.

It is manifestly impossible to arrive at the exact composition of the average milk on sale in this State for several reasons: there is no way of arriving at a conclusion except by a study of the samples collected by inspectors, and inspections as a rule are naturally more frequent in localities where milk is most extensively adulterated and least where the sale of a high quality of milk is the rule. Owing to the increased

demand in summer resort cities and towns the milk on sale in the summer months is extensively adulterated, while that supplied in the winter is of good quality as a rule. The character of the milk varies with the locality; thus milk on sale in towns is better than milk sold in cities, and the milk of the western part is superior to that of the eastern part of the State. The quality of milk varies with the breed. It is evident, therefore, that any conclusions drawn from the work of the food inspection department of the Massachusetts State Board of Health will point to the sale of a lower average quality of milk than is actually the case.

Since August, 1908 (the present milk standard went into effect July 13, 1908), 2,487 samples have been examined in the food laboratory of this Board, and the results of these examinations are reported in Table I.

TABLE I. — *Summary of Analyses of Samples of Milk examined during Eight Months.*

TOTAL SOLIDS.	1908.					1909.			
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Totals.
Above 15 per cent.,	6	7	7	10	3	3	5	17	58
Between 14 per cent. and 15 per cent.,	15	8	35	29	22	27	17	42	195
Between 13 per cent. and 14 per cent.,	43	72	159	142	85	92	54	123	770
Between 12.15 per cent. and 13 per cent.,	99	119	147	162	119	109	96	112	963
Between 11 per cent. and 12.15 per cent.,	106	37	79	42	36	34	27	30	391
Between 10 per cent. and 11 per cent.,	23	14	9	8	5	2	3	6	70
Between 9 per cent. and 10 per cent.,	2	2	4	2	4	5	4	3	26
Between 8 per cent. and 9 per cent.,	2	–	–	–	2	1	1	1	7
Below 8 per cent.,	4	–	2	–	–	1	–	–	7
Totals,	300	259	442	395	276	274	207	334	2,487

A study of this table, which includes many samples of skimmed and watered milk, shows that 95.4 per cent. of the samples were above 11 per cent. in total solids, 79.7 per cent. were above 12.15 per cent. total solids and 41 per cent. were above 13 per cent. total solids. If nearly 80 per cent. of the samples collected, most of which had passed through two or more hands before being taken by the inspector, were above the standard, there is no reason why the other 20 per cent. could not have been so.

TABLE II. — *Averages of Samples of Milk collected.*

	Number of Samples.[1]	Average Total Solids (Per Cent.).	Average Fat (Per Cent.).	Number of Samples.[2]	Average Total Solids (Per Cent.).	Average Fat (Per Cent.).
July, 1908,	340	12 30	–	308	12.57	–
August, 1908,	293	12.17	–	252	12.49	–
September, 1908,	297	12.52	–	280	12.67	–
October, 1908,	388	12.79	–	376	12 84	–
November, 1908,	387	12 98	–	365	13.06	–
December, 1908,	259	12 65	3.85	248	12.77	3.92
January, 1909,	274	12 67	3.72	263	12.77	3.83
February, 1909,	201	12.74	3.94	192	12.85	4.04
March, 1909,	291	13.09	4.18	283	13.19	4.25

[1] Total samples collected exclusive of cream and known purity samples.
[2] Above samples exclusive of those declared skimmed and watered.

Table II. gives the averages of samples colleeted between July 1, 1908, and March 31, 1909. In making these averages no figures were used except those obtained from samples less than 17 per cent. in total solids collected by inspectors from stores, milk teams, or produeers supplying wholesale or retail milk dealers. One column was compiled from all the samples collected as described, while the other column contains results from those which could not be declared adulterated. In looking over the figures for total solids we find the lowest average to be above the standard This figure. 12.17 per cent. in August, is the average of 293 samples, of which 41, or 14 per cent., were either adulterated or skimmed[3] milk. Eliminating the samples declared skimmed and watered, the lowest average total solids was 12.49 per cent., during August, and the highest 13.19 per cent., in March. The average percentage of fat, which can be reported only since December, is in the neighborhood of 4 per eent.

In the annual report of the State Board of Health for 1899, page 616, are reported figures showing the composition of the milk on sale during December, 1898, and June, 1899. In compiling these figures, samples between 10.75 per cent. and 17 per cent. solids were used, and the average total solids of 502 samples obtained during December, 1898, was found to be 13.32 per cent., with an average fat of 4.42 per cent. The average total solids of 387 samples collected in June, 1899, was found to be 12.65 per cent., and the average fat 4.06 per cent. These figures were more nearly a correct average of the milk sold in the State than those reported for the past year, as special pains were taken to collect the samples uniformly throughout the State.

Taking into account the large number of inspections in suspected localities, it is fair to presume that the average milk sold in this State is somewhat better than that shown by the figures reported, and its total solids would be at least 13 per cent., with a fat of at least 4 per cent.

[3] A large number of samples of skimmed milk are collected, most of which are above the standard, although the solids may be as low as 9.4 per cent. These samples are not to be considered as adulterated, yet they lower the average total solids.

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WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS OF MORE THAN 10,000 POPULATION.

WEEK ENDING APRIL 3, 1909.

CITIES AND TOWNS.	Population,[1] Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	240	48	112	54	19	5	–	3
Worcester,	136,476	39	6	18	10	7	–	–	–
Fall River,	106,486	57	18	24	15	4	–	1	–
Cambridge,	102,112	35	9	18	8	5	–	–	–
Lowell,	96,380	31	10	12	8	3	–	1	–
New Bedford,	85,516	31	–	14	11	3	–	–	–
Lynn,	84,623	31	9	8	–	4	2	–	–
Springfield,	84,237	29	6	6	6	–	–	–	–
Lawrence,	78,000	28	8	9	5	2	1	–	–
Somerville,	76,049	20	3	9	5	2	–	–	–
Brockton,	55,039	13	4	6	4	–	–	–	2
Holyoke,	53,590	20	13	11	6	5	–	–	–
Malden,	41,941	17	4	4	3	1	–	–	–
Chelsea,	40,080	12	3	1	–	1	–	–	–
Newton,	39,642	11	3	3	3	–	–	–	–
Salem,	39,019	19	3	4	3	1	–	–	–
Haverhill,	38,362	13	2	8	8	–	–	–	–
Fitchburg,	34,263	7	1	1	–	1	–	–	–
Everett,	33,597	9	5	–	–	–	–	–	–
Quincy,	31,937	9	2	3	2	1	–	–	–
Taunton,	30,967	13	5	9	5	2	–	–	–
Waltham,	28,761	11	5	5	4	–	1	–	–
Pittsfield,	27,932	9	3	5	1	3	–	–	–
Brookline,	26,674	8	1	2	–	1	–	–	–
Gloucester,	26,011	3	–	–	–	–	–	–	–
North Adams,	22,150	11	6	2	–	1	–	–	–
Northampton,	21,075	9	1	–	–	–	–	–	–
Chicopee,	21,049	10	7	3	1	–	1	–	–
Medford,	20,921	9	–	1	1	–	–	–	–
Beverly,	16,386	4	1	3	2	–	–	–	–
Leominster,	16,030	4	2	2	2	–	–	–	–
Hyde Park,	15,609	9	2	4	–	3	–	–	–
Melrose,	15,459	3	0	2	2	–	–	–	–
Newburyport,	14,834	9	–	6	5	–	–	–	–
Revere,	14,820	6	1	1	1	–	–	–	–
Westfield,	14,750	6	2	4	3	1	–	–	–
Woburn,	14,522	7	1	2	1	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	3	1	1	1	–	–	–	–
Attleborough,	13,913	3	1	–	–	–	–	–	–
Adams,	13,685	5	–	1	1	–	–	–	–
Clinton,	13,105	9	5	1	–	–	–	–	–
Gardner,	13,066	6	1	2	–	2	–	–	–
Milford,	12,722	3	1	–	–	–	–	–	–
Watertown,	12,676	10	4	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	4	–	2	2	–	–	–	–
Weymouth,	11,798	2	0	–	–	–	–	–	–
Framingham,	11,749	4	–	1	–	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	2	–	–	–	–	–	–	–
Greenfield,	10,140	6	–	1	1	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,379,468	859	207	331	184	72	10	2	5

[1] The populations were estimated upon the rate of growth from 1900 to 1905. Those of Taunton, Gloucester, North Adams and Clinton were allowed to stand as in 1905, having shown no increase during the five-year period. The gain in the population of Lowell is due to the annexation of a part of the town of Tewksbury. The population of Lawrence by the census of 1905 was 70,050, but, owing to the building of the new Wood and Arlington mills, an increase of about 8,000 is estimated by the Lawrence board of health, or 78,000.

Week ending April 10, 1909.

Cities and Towns.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	Deaths from—					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	290	63	109	48	27	1	2	2
Worcester,	136,476	43	7	14	9	3	–	1	–
Fall River,	106,486	48	16	17	11	3	–	–	–
Cambridge,	102,112	28	9	13	9	1	–	–	–
Lowell,	96,380	34	13	10	8	2	–	–	–
New Bedford,	85,516	30	7	7	4	2	–	1	–
Lynn,	84,623	31	8	2	–	1	–	–	–
Springfield,	84,237	27	9	5	1	2	1	–	–
Lawrence,	78,000	24	5	8	5	3	–	–	–
Somerville,	76,049	26	7	5	1	1	1	–	1
Brockton,	55,039	13	5	7	4	–	–	–	1
Holyoke,	53,590	16	6	7	4	1	1	–	–
Malden,	41,941	14	2	5	5	–	–	–	–
Chelsea,	40,080	11	1	–	–	–	–	–	–
Newton,	39,642	11	5	2	2	–	–	–	–
Salem,	39,019	16	5	5	5	–	–	–	–
Haverhill,	38,362	12	1	5	2	1	1	–	–
Fitchburg,	34,263	5	1	2	1	1	–	–	–
Everett,	33,597	11	2	4	1	3	–	–	–
Quincy,	31,937	7	1	1	–	1	–	–	–
Taunton,	30,967	11	2	4	1	1	–	–	1
Waltham,	28,761	10	3	4	3	–	–	–	1
Pittsfield,	27,932	7	3	–	–	–	–	–	–
Brookline,	26,674	8	1	–	–	–	–	–	–
Gloucester,	26,011	8	–	–	–	–	–	–	–
North Adams,	22,150	9	4	4	2	1	–	–	–
Northampton,	21,075	7	0	1	1	–	–	–	–
Chicopee,	21,049	13	6	3	1	2	–	–	–
Medford,	20,921	6	–	2	1	–	–	–	–
Beverly,	16,386	3	1	–	–	–	–	–	–
Leominster,	16,030	6	1	1	1	–	–	–	–
Hyde Park,	15,609	3	0	–	–	–	–	–	–
Melrose,	15,459	6	0	2	–	2	–	–	–
Newburyport,	14,834	3	–	–	–	–	–	–	–
Revere,	14,820	1	–	–	–	–	–	–	–
Westfield,	14,750	6	1	2	1	–	1	–	–
Woburn,	14,522	2	0	1	–	1	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	6	0	–	–	–	–	–	–
Attleborough,	13,913	2	0	–	–	–	–	–	–
Adams,	13,685	2	–	1	1	–	–	–	–
Clinton,	13,105	5	5	–	–	–	–	–	–
Gardner,	13,066	8	0	1	–	–	–	–	–
Milford,	12,722	6	1	–	–	–	–	–	–
Watertown,	12,676	6	4	1	1	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	2	1	1	1	–	–	–	–
Weymouth,	11,798	5	0	1	–	1	–	–	–
Framingham,	11,749	3	1	1	–	1	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	4	–	1	1	–	–	–	–
Greenfield,	10,140	2	–	1	–	1	–	–	–
Recapitulation.									
Total of reporting towns,	2,379,468	857	207	260	135	62	6	4	6

WEEK ENDING APRIL 17, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM—					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	244	60	94	40	22	4	–	4
Worcester,	136,476	46	11	16	11	2	–	–	–
Fall River,	106,486	42	17	18	7	4	–	–	–
Cambridge,	102,112	25	6	10	6	4	–	–	–
Lowell,	96,380	39	14	15	14	–	1	–	–
New Bedford,	85,516	26	11	7	4	3	–	–	–
Lynn,	84,623	19	5	3	–	2	1	–	–
Springfield,	84,237	29	6	11	8	2	1	–	–
Lawrence,	78,000	24	12	11	4	1	2	–	1
Somerville,	76,049	12	1	2	2	–	–	–	–
Brockton,	55,039	12	4	2	–	–	–	–	1
Holyoke,	53,590	17	11	6	–	1	1	1	–
Malden,	41,941	17	5	3	2	1	–	–	–
Chelsea,	40,080	13	1	1	–	1	–	–	–
Newton,	39,642	14	3	4	3	–	1	–	–
Salem,	39,019	20	4	5	5	–	–	–	–
Haverhill,	38,362	15	–	3	1	1	–	–	–
Fitchburg,	34,263	8	3	4	3	1	–	–	–
Everett,	33,597	6	2	–	–	–	–	–	–
Quincy,	31,937	10	2	1	–	–	–	–	–
Taunton,	30,967	9	1	4	3	–	–	–	–
Waltham,	28,761	5	1	1	1	–	–	–	–
Pittsfield,	27,932	11	3	1	–	1	–	–	–
Brookline,	26,674	7	1	2	1	–	–	1	–
Gloucester,	26,011	3	–	–	–	–	–	–	–
North Adams,	22,150	6	1	1	1	–	–	–	–
Northampton,	21,075	11	2	1	–	1	–	–	–
Chicopee,	21,049	8	3	3	3	–	–	–	–
Medford,	20,921	5	2	2	1	–	–	–	–
Beverly,	16,386	3	–	1	–	1	–	–	–
Leominster,	16,030	2	–	–	–	–	–	–	–
Hyde Park,	15,609	2	0	–	–	–	–	–	–
Melrose,	15,459	6	1	3	3	–	–	–	–
Newburyport,	14,834	5	–	1	–	–	–	–	–
Revere,	14,820	4	3	3	1	1	–	–	1
Westfield,	14,750	5	1	1	–	1	–	–	–
Woburn,	14,522	2	–	1	1	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	3	0	1	1	–	–	–	–
Attleborough,	13,913	3	0	1	1	–	–	–	–
Adams,	13,685	3	1	2	2	–	–	–	–
Clinton,	13,105	5	2	–	–	–	–	–	–
Gardner,	13,066	2	0	2	1	–	–	–	–
Milford,	12,722	3	0	–	–	–	–	–	–
Watertown,	12,676	8	3	6	4	1	–	–	1
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	2	2	2	1	1	–	–	–
Weymouth,	11,798	4	0	1	–	1	–	–	–
Framingham,	11,749	6	1	2	2	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	4	0	–	–	–	–	–	–
Greenfield,	10,140	–	–	–	–	–	–	–	–

Recapitulation.

Total of reporting towns,	2,379,468	775	206	258	137	53	11	2	8

WEEK ENDING APRIL 24, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM—					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	226	69	91	34	26	2	1	5
Worcester,	136,476	31	11	9	6	1	–	–	–
Fall River,	106,486	35	8	22	13	1	1	–	–
Cambridge,	102,112	28	5	5	5	–	–	–	–
Lowell,	96,380	30	7	11	4	3	–	2	–
New Bedford,	85,516	29	9	10	5	5	–	–	–
Lynn,	84,623	21	5	1	–	–	–	–	–
Springfield,	84,237	25	3	7	4	–	–	–	–
Lawrence,	78,000	36	11	12	8	3	–	–	1
Somerville,	76,049	19	2	6	5	–	–	–	–
Brockton,	55,039	7	1	3	–	1	–	–	–
Holyoke,	53,590	17	7	8	3	1	2	–	–
Malden,	41,941	11	1	5	2	3	–	–	–
Chelsea,	40,080	16	1	1	–	1	–	–	–
Newton,	39,642	10	2	5	2	2	–	–	–
Salem,	39,019	10	2	2	1	1	–	–	–
Haverhill,	38,362	11	3	4	1	2	–	–	–
Fitchburg,	34,263	8	3	3	2	–	–	–	–
Everett,	33,597	7	–	–	–	–	–	–	–
Quincy,	31,937	10	5	5	2	2	–	–	–
Taunton,	30,967	14	2	6	1	3	1	–	–
Waltham,	28,761	6	1	4	2	2	–	–	–
Pittsfield,	27,932	8	–	–	–	–	–	–	–
Brookline,	26,674	8	1	1	–	–	–	–	–
Gloucester,	26,011	4	–	–	–	–	–	–	–
North Adams,	22,150	6	–	3	1	2	–	–	–
Northampton,	21,075	9	1	2	–	1	–	–	–
Chicopee,	21,049	5	2	1	1	–	–	–	–
Medford,	20,921	7	1	1	–	–	–	–	–
Beverly,	16,386	3	–	–	–	–	–	–	–
Leominster,	16,030	–	–	–	–	–	–	–	–
Hyde Park,	15,609	4	0	–	–	–	–	–	–
Melrose,	15,459	5	2	2	2	–	–	–	–
Newburyport,	14,834	2	1	2	1	1	–	–	–
Revere,	14,820	2	–	1	–	–	–	–	–
Westfield,	14,750	4	1	1	1	–	–	–	–
Woburn,	14,522	5	1	2	–	2	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	3	1	1	–	–	1	–	–
Attleborough,	13,913	1	0	–	–	–	–	–	–
Adams,	13,685	3	1	1	–	–	–	–	–
Clinton,	13,105	9	0	1	–	–	1	–	–
Gardner,	13,066	5	1	2	2	–	–	–	–
Milford,	12,722	2	0	–	–	–	–	–	–
Watertown,	12,676	0	–	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	2	1	1	1	–	–	–	–
Weymouth,	11,798	1	0	–	–	–	–	–	–
Framingham,	11,749	4	1	1	1	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	2	0	–	–	–	–	–	–
Greenfield,	10,140	3	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,363,438	714	173	243	110	63	8	3	6

WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.

DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF APRIL 3, 10, 17 AND 24, 1909.

DISEASE.	Place.	WEEK ENDING—			
		Apr. 3.	Apr. 10.	Apr. 17.	Apr. 24
Cerebro-spinal meningitis,	Beverly,	1	–	–	–
	Boston,	1	2	–	3
	Cambridge,	1	–	–	–
	Newton,	–	–	–	1
	Worcester,	–	1	2	1
Scarlet fever,	Boston,	4	3	4	2
	Brockton,	–	–	–	1
	Chicopee,	1	–	–	–
	Fall River,	–	–	–	1
	Lowell,	–	–	–	1
	Pittsfield,	1	–	–	–
	Somerville,	1	1	–	1
	Springfield,	–	1	–	–
Whooping cough,	Boston,	2	2	2	2
	Brockton,	–	1	–	–
	Cambridge,	1	–	–	–
	Clinton,	1	–	–	–
	Fall River,	–	–	1	–
	Fitchburg,	–	–	–	1
	Lowell,	–	–	–	1
	Medford,	–	–	1	–
	Northampton,	–	–	–	1
	Quincy,	–	–	–	1
	Taunton,	–	–	–	1
	Worcester,	–	–	1	–
Erysipelas,	Adams,	–	–	–	1
	Boston,	2	4	2	–
	Fall River,	1	–	–	–
	Lawrence,	–	–	1	–
	Lynn,	1	–	–	–
	Springfield,	–	–	–	1
	Woburn,	1	–	–	–
Tuberculosis other than pulmonary.	Boston,	3	3	5	4
	Brockton,	1	–	–	–
	Cambridge,	2	1	–	–
	Gardner,	–	1	1	–
	Holyoke,	–	–	–	1
	Newburyport,	1	–	1	–
	Quincy,	–	–	1	–
	Revere,	–	–	–	1

DISEASE.	Place.	Week ending — Apr. 3.	Apr. 10.	Apr. 17.	Apr. 24.
Meningitis, other than cerebro-spinal.	Framingham,	1	–	–	–
	Lynn,	1	1	–	1
	Medford,	–	–	–	1
Influenza,	Boston,	5	5	5	3
	Haverhill,	–	1	1	1
	Holyoke,	–	1	–	–
	Medford,	–	1	–	–
	Springfield,	–	–	–	1
	Taunton,	–	–	1	–

WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

Cases of Infectious Diseases reported during the Weeks of April 3, 10, 17 and 24, 1909.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending — Apr. 3.	Apr. 10.	Apr. 17.	Apr. 24.
Diphtheria,	145	109	150	108
Measles,	572	549	505	522
Scarlet fever,	194	141	170	152
Typhoid fever,	23	14	19	22
Tuberculosis, pulmonary,	174	165	153	141
Cerebro-spinal meningitis,	3	2	4	9
Whooping cough,	42	43	91	29
Varicella,	53	39	46	42
Erysipelas,	1	–	1	1
Mumps,	–	3	–	–
Ophthalmia neonatorum,	1	1	3	1
Tuberculosis other than pulmonary,	2	2	3	1
Smallpox,	–	–	1	1
Tetanus,	–	–	1	–

MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of April, 1909: —

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Butter,	7	–	7	Maple syrup,	2	–	2
Canned fruit and vegetables,	8	1	9	Meat products: —			
Cheese,	2	1	3	Hamburg steak,	3	1	4
Cider,	2	–	2	Mince meat,	1	–	1
Cocoa,	4	–	4	Sausages,	9	3	12
Condensed milk,	6	–	6	Milk,	175	45	220
Cream,	14	–	14	Nonalcholic drinks,	2	–	2
Drugs,	85	46	131	Olive oil,	18	5	23
Extract of vanilla,	2	–	2	Pickles,	1	–	1
Grape juice,	4	–	4	Salad dressing,	4	–	4
Honey,	1	–	1	Spices,	5	–	5
Horse radish,	3	–	3	Table sauces,	3	3	6
Jams and jellies,	4	–	4	Wine,	–	2	2
Lard,	2	1	3				
Malt liquors,	5	–	5	Total,	388	111	499
Maple sugar,	16	3	19				

The samples of drugs found to be adulterated were: extract of liquorice, mercurial ointment, oxide of zinc ointment and proprietary medicines.

The cities and towns in which samples were collected were: Amesbury, Ayer, Beverly, Boston, Brockton, Billerica, Braintree, Cambridge, Concord, Dedham, Easton, Everett, Fall River, Fitchburg, Foxborough, Gloucester, Harvard, Haverhill, Ipswich, Lawrence, Lowell, Lynn, Malden, Marlborough, Maynard, Melrose, Medford, Milford, New Bedford, Newburyport, Northborough, North Reading, Peabody, Quincy, Salem, South Framingham, Springfield, Taunton, Wakefield, Waltham, Woburn and Worcester.

PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING TO FOOD AND DRUGS.

Twenty-seven convictions were secured during the month of April, 1909, for selling adulterated food, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	Cornelius Keefe,	Boston,	Cider (containing benzoic acid).
2	Cornelius Keefe,	Boston,	Cider (containing benzoic acid).
3	Charles Maspero,	Dorchester,	Maple sugar (65 per cent. cane sugar).[1]
4	Joseph Pacone,	Quincy,	Maple sugar (80 per cent. cane sugar).
5	Louis Sasserno,	Dorchester,	Maple sugar (65 per cent. cane sugar).
6	Arthur E. Dutton,	Chelmsford,	Milk (total solids, 11.52).[1]
7	Jacob A. Dyer,	South Braintree,	Milk (skimmed; cans not marked).
8	Herbert L. Kimball,	Northborough,	Milk (total solids, 11.57).
9	Chas. H. Peloquin,	Marlborough,	Milk (total solids, 11.70).
10	Edward A. Piper,	Ashby,	Milk (skimmed; cans not marked).
11	Adelard J. Poudrier,	Marlborough,	Milk (total solids, 11.66).
12	Olin E. Swan,	South Framingham,	Milk (total solids, 11.66).
13	William R Underhill,	Ashby,	Milk (skimmed; cans not marked).
14	Edward C. Wright,	Chelmsford,	Milk (total solids, 10.49).[1]
15	Daniel P. Grosvenor,	Peabody,	Mercurial ointment (30.2 per cent. U. S. P).
16	Mamad Effendi,	Peabody,	Olive oil (contained 50 per cent. cotton-seed oil).
17	Peter Kalelis,	Peabody,	Olive oil (contained 60 per cent. cotton-seed oil).
18	James Liacos,	Peabody,	Olive oil (wholly cotton-seed oil).
19	Louis Sgouaas,	Peabody,	Olive oil (contained 80 per cent. cotton-seed oil).
20	Emanuel J. Sophos,	Peabody,	Olive oil (contained 60 per cent. cotton-seed oil).
21	Frank Bott,	Boston,	Strawberry preserve (contained salicylic acid).
22	Mederic Diegeant,	Boston,	Sausage (preserved with sulphurous acid).
23	Walker Armington, Jr.,	Worcester,	Vinegar.
24	Max Israel,	Worcester,	Vinegar.
25	Ulderic V. Viegeant,	Worcester,	Vinegar,
26	Joe Keller,	Lowell,	Unstamped veal.
27	William S. McCarthy,	Boston,	Unstamped veal.

[1] Appealed.

Fines imposed, $530.

LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR APRIL, 1909.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
q 1901	Milk, ...	William E. Dailey, South Braintree, Mass., . . .	Total solids, 9.94 per cent.; contained added water.
q 1931	Milk, ...	Edward C. Wright, Chelmsford, Mass., ...	Total solids, 10.49 per cent.; contained added water.
q 1972	Milk, ...	Samuel Mills, Westminster, Mass , ...	Total solids, 11.14 per cent.; contained added water.
q 1979	Milk, ...	Louis Reynolds, Westminster, Mass., ...	Total solids, 11.46 per cent.; contained added water.
q 1958	Canned peas, Omaha Brand.	Thorndike & Hix, Portland, Me., ...	Soaked peas; improperly labeled.
778 n	Cheese, ...	McLaren Imperial Cheese Company, Toronto, Can., .	Contained borax; improperly labeled.
676 n	Stearns's Wine of Cod Liver Oil.	Frederick Stearns Company, Detroit, Mich., . . .	Contained 20.3 per cent. alcohol (percentage not stated).
662 n	A. & P. Root Beer Extract.	The Great Atlantic and Pacific Tea Company, New York, N. Y.	Contained 3.78 per cent. alcohol (percentage not stated).
9559 P.	Olive oil, . . .	Olio Sopraffino Francescani Brand, Prodotti Di Olii, .	Contained cottonseed oil.
9552	Oscar's Sauce, . .	Oscar of the Waldorf-Astoria, ...	Contained benzoic acid.
9262	Bishop's California Chili Sauce.	Bishop & Co., Los Angeles, San Francisco, New York, .	Contained benzoic acid; improperly labeled.
742 n	Griffon Catsup, . .	California Fruit Canners Association, ...	Contained benzoic acid; improperly labeled.
912 n	Dr. Holbrook's Kola Powders.	Holbrook Kola Company, Boston, ...	Improperly labeled.

THE HOUSE FLY AS AN AGENT IN THE DISSEMINATION OF INFECTIOUS DISEASES.[1]

By Theobald Smith, M.D., Pathologist of the Massachusetts State Board of Health.

On being asked by our vice-president, Dr. Durgin, to open a discussion on the house fly as an agent in the dissemination of infectious diseases, I consented with some reluctance, because my first-hand knowledge of this subject is slight. I realize that the matter is one of considerable importance, however, — one which cannot be too strongly brought to the attention of health officers, communities and individuals.

It is hardly necessary to cite authorities on the capacity of the house fly to carry bacteria from one place to another. This capacity has been amply demonstrated and confirmed. The house fly is known to be strongly attracted by noisome odors. It hovers about and feeds on human excreta. It eats blood, pus, sputum and other pathological products. In fact, its habits are well adapted to favor the soiling of the exterior of its body, and to fill its interior with various species of disease germs. Pathogenic bacteria have been demonstrated on its proboscis, its feet, in its digestive tract and its excreta, the well-known fly specks.

The kinds of infections which it is best adapted to transport from place to place are typhoid, dysentery and Asiatic cholera. By seeding our foods, notably milk, with these germs, which it obtains from dejections, it may cause small localized family epidemics.

The bacilli of tuberculosis may also be disseminated by it, because the fly will feed on sputum, and the tubercle bacilli may pass alive through the digestive tract and appear in the fly specks. Dr. Lord found living tubercle bacilli in the excreta of flies fed with sputum fifteen days after they had been passed. The severe epidemics of typhoid in our camps during the Spanish-American war were attributed by the investigating commission to flies. There can be no doubt that the house fly is a potential danger in proportion to the number of individuals living in our environment.

I believe that this position will hardly be questioned by any one to-day, and it is not necessary to spend any more time on this aspect of the subject. The more important problem confronting us is, how to restrict

[1] Reprinted from American Journal of Public Hygiene, August, 1908. Read at a quarterly meeting of the Massachusetts Association of Boards of Health, July 23, 1908.

and suppress this noxious insect. In order that the house fly may be controlled, we must know where it breeds. The war upon mosquitoes was made, not upon the winged insect, but upon the larval stages in the water. In the same way the war upon flies cannot be successfully waged with fly paper and fly traps, but it must be waged in the country of the enemy itself, against its breeding places.

In order that we may obtain a better view of the enemy's territory, it will be necessary to broaden our remarks so as to include certain other flies as well. For our immediate purposes flies may be divided into the biting and non-biting flies. Among the former are the flies that infest domestic animals, — the horseflies and stable flies. Among these belong the dreaded *Glossina* species, which carry the trypanosomes of sleeping sickness and of several animal scourges.

The biting flies are to be found chiefly in the country, where they congregate near barns and stables. Among the non-biting or sucking flies belong the house fly, the various flesh flies and blow flies which lay their eggs on decomposing flesh.

Of these flies as carriers and inoculators of infection in our climate little is known, and therefore little can be said. They should, however, not be wholly neglected as causes of disease. Veninger, in the *Wiener Med. Woch.* of 1906, reports a case of inoculation, — smallpox in an infant nine months old, who lived in a tenement across the street from the smallpox division of the children's hospital in Vienna. The physician found the child with high fever and a smallpox pustule on the inner angle of the left eye corresponding to six or seven days' development. The child developed generalized smallpox two days later, and succumbed to it. Veninger reasonably infers that nothing but a biting fly could have been responsible for this case.

The development of these various species is practically the same, and resembles in a general way that of the mosquito. If in the breeding of the mosquito we replace water with putrefactive and fermenting animal and vegetable matter, we will have a fairly correct picture of the life cycle of flies. They lay their eggs upon horse dung, cow dung, decaying vegetables, fresh meat, cheese, dead animals and human excreta. The larvæ emerge from the egg and feed on the mass on which they were deposited. After a variable number of days they shut themselves into their skin, which forms a hard case (puparium) around them, and in it they are known as pupæ. There they undergo that marvelous transformation into the winged insect. Different species of flies prefer different decomposing material. The blow flies prefer meat: the flesh flies, dead animals; some, cow dung: others, horse dung. The house fly's chief breeding place is horse manure, but according to recent studies

by Newstead in Liverpool, besides horse manure, spent hops, piggeries, old fermenting straw, paper, rags and other refuse, mixed with human excreta, contained the larvæ of the house fly. Decaying vegetables, old straw mattresses, rotten sacks in state of fermentation, also gave them sustenance.

A single house fly lays one hundred and twenty to one hundred and forty eggs, each about one-sixteenth inch long. The larvæ (or maggots, as they are commonly called) leave the egg earliest eight hours after laying. They mature in five to eight days, and then pupate. The pupæ mature earliest in five to seven days. The adult fly requires, therefore, at least ten days (from the time of egg laying) to mature.

Our relation to the pest of flies is best exemplified by the answer to the question, What are flies for? This question we should always try to answer when we are endeavoring to destroy some species, for it frequently contains a solution of our difficulties, besides putting us on the right track towards further inquiries. Professor Comstock answers this question as follows: "Although the habits of these creatures, which revel in all kinds of filth, are very disgusting, we cannot help admiring that arrangement by which a mass of filth, instead of being left to poison the atmosphere, is transformed into myriads of living beings, whose swift flight and delicate forms lend life and beauty to the landscape."

This means that they are scavengers prepared to remove decomposing and putrefying matter by converting it into living things. The same is true of the bacteria. They are the scavengers of nature, absolutely indispensable. Only a small per cent. of the many species have become parasites and disease germs. The house fly, unfortunately, by leaving the disgusting material upon which it normally feeds and entering human habitations and attacking our foods, has become a nuisance and a danger.

When we go into public restaurants in midsummer and are compelled to fight for our food with the myriads of house flies which we find there, alert, persistent and invincible, we should ask ourselves, Where did all these flies find a place to breed? What is the matter with this place, or the region immediately around it?

If we were allowed to investigate, we should probably find one or more of three causes operating: neglected garbage, some stable with accumulating horse manure, or a dump near by. At the seashore other species of flies find the dead fishes thrown on shore good breeding grounds.

The difficulties with garbage are several. It is not always regularly collected. The receptacles are not cleaned out properly, so that the remnants of garbage permit the complete development of the fly in them.

If garbage were collected thoroughly but once a week, the house fly, which requires at least ten days to complete its development, would not mature in it. But the unsatisfactory receptacles used and the incomplete removal of their contents perpetuate the nuisance.

On dumping grounds I assume that many eggs, larvæ and pupæ of flies are deposited in the material brought there, and the development continues to the end. The public refuses to sort its refuse properly, as directed by the city authorities, and as a result many things are thrown upon dumping grounds which should have been incinerated by the individual householders.

In all the difficulties surrounding the public effort to keep a city clean the individual households are largely to blame. Neatness and cleanliness must begin at home, and no amount of effort and expenditure on the part of the city government can overcome family inertia. Moreover, the filth accumulating in a neighbor's back yard or cellar injures the entire neighborhood, for the flies soon migrate from their breeding grounds. For these they have no more use until they are ready to deposit a batch of eggs.

The campaign against the house fly and other flies with similar habits is a campaign for general cleanliness and neatness, besides being a campaign against a troublesome pest. Like most movements directed in the interest of the public health, it broadens out from its original narrow intent. The war against human tuberculosis has become a movement for more normal, hygienic living in all details of our every-day existence. The fight against bovine tuberculosis has taught us to value above all a clean milk. The campaign against malaria has broadened into one against the mosquito, and will eventually extend to a general movement for the reclamation and utilization of the valuable lands now useless as swamps and marshes. In some other countries the preparation to successfully meet the plague has called attention to the enormous aggregate losses due to rats. It has already demonstrated the need of a better construction of sewers in many places, and has re-emphasized the flimsiness of wood as a building material. Not that all these needful improvements and reforms were not recognized long ago by sanitarians. They now serve as great public lessons and demonstrations, and stimulate the people first to reflect and then to act. It needs two parties to all reforms, — the one who discovers the need for it, and the people to respond. The first is powerless without the second.

There are many things we still need to know about the house fly, but we need not wait for these to begin active hostilities.

OPHTHALMIA NEONATORUM: PREVENTIVE TREATMENT, SUGGESTIONS AND TREATMENT OF THE DISEASE.[1]

Ophthalmia neonatorum is an inflammation of the eyes of the new-born, which is usually due to infection by a specific organism. If not properly treated, blindness is a very common result. A large proportion of the blind babies owe their loss of sight to this cause. Blindness rarely occurs if the disease is properly treated from the beginning. The possibility of any baby becoming infected at the time of confinement should be constantly borne in mind, and it is desirable to carry out a routine preventive treatment in every case.

Preventive Treatment.

1. After washing the lids and adjacent tissues, drop into the eye of every new-born babe a few drops of a 25 per cent. solution of argyrol, or a 5 per cent. solution of protargol.

2. It is not necessary to wash the solution from the eyes, as it is practically non-irritating.

3. Care should be taken that the end of the dropper does not touch the eye-ball, and that the finger-nails do not come in contact with the cornea.

4. The solution of argyrol or protargol should be freshly prepared for each confinement case.

Suggestions.

1. Before leaving a confinement case, the physician should instruct the nurse, or, if a nurse is not employed, the most intelligent member of the family, to notify the doctor *at once* if the eyes become inflamed and discharge matter. He should also call attention to Section 49 of Chapter 75 of the Revised Massachusetts Laws.[2]

2. When possible, these cases should be placed in the hands of an oculist. It is extremely desirable that all cases met with among the poorer classes be transferred at once to the Massachusetts Charitable Eye and Ear Infirmary, or some similar institution in the city where they occur. This is advisable, not only for the good of the child, but for the safety of other members of the family as well; for the fact must not

[1] Prepared by the committee appointed by the Massachusetts Medical Society "To consider what measures should be taken by the society to prevent the occurrence and secure the prompt and effective treatment of ophthalmia neonatorum."

[2] See page 74.

be lost sight of that the disease is very contagious, and that if the eyes of an adult or older child become infected it means an inflammation of even greater seriousness than when present in the eye of the new-born babe.

3. If circumstances make it necessary that the child be treated at home, the serious and infectious nature of the disease should be impressed upon the family. The baby should be separated from the other children. Caution should be given to those having the care of the child that their hands should be frequently washed and not brought in contact with their own eyes. All bits of cotton used about the eye should be burned. Towels and all that may come in contact with the discharge should be carefully separated and thoroughly boiled.

4. The following treatment should be begun at once: —

Treatment.

Wash the eyes every forty minutes with a 3 per cent. boric acid solution. This requires the services of two intelligent persons, preferably nurses, one for day and the other for night duty. They should be carefully instructed that in cleansing the eyes the inner angle and edges of the lids, which are usually tightly shut, should be freed from discharge by means of a bit of absorbent cotton wet with the solution. If the lids are then separated, most of the retained secretion will escape, and what remains can easily be dislodged by taking another bit of cotton, thoroughly saturated with the solution, holding it an inch or two above the eyes, and then by pressure causing a stream to flow gently into the conjunctival sac. The lids should be dried after each washing, and four or five times a day it is well to apply a little simple ointment to their edges. Nurses or attendants doing this work should have their finger-nails trimmed as short as possible, for if a slight abrasion of the cornea be made in the process of washing the eyes or separating the lids, it will be quickly followed by infection and ulceration. The danger of the baby scratching the cornea with its finger-nails should also be prevented by confining the hands.

Next in importance to cleanliness is the use of some silver salt. A 25 per cent. solution of argyrol or a 5 per cent. solution of protargol may be used freely every four hours, the eyes to be first freed from secretion. In applying the remedy, the child should be placed flat on the back, and the head so held that the solution will not quickly escape from the eyes. The lids being separated with the thumb and finger, a few drops should be instilled with an eye-dropper. Careful instructions should be given, however, that the end of the dropper be not brought in contact with the cornea, or the instillation made with too great force.

This treatment, — frequent cleaning of the eyes, and the use of argyrol or protargol, — if it can be thoroughly and systematically carried out, will, with rare exceptions, insure a perfect recovery.

CHAPTER 75, REVISED MASSACHUSETTS LAWS.

SECTION 49. . . . Should one or both eyes of an infant become inflamed, swollen and red, and show an unnatural discharge at any time within two weeks after its birth, it shall be the duty of the nurse, relative or other attendant having charge of such infant to report in writing within six hours thereafter, to the board of health of the city or town in which the parents of the infant reside, the fact that such inflammation, swelling and redness of the eyes and unnatural discharge exist. On receipt of such report, or of notice of the same symptoms given by a physician as provided by the following section, the board of health shall take such immediate action as it may deem necessary in order that blindness may be prevented. Whoever violates the provisions of this section shall be punished by a fine of not more than one hundred dollars.

SECTION 50. If a physician knows that . . . one or both eyes of an infant whom or whose mother he is called to visit become inflamed, swollen and red, and show an unnatural discharge within two weeks after the birth of such infant, he shall immediately give notice thereof in writing over his own signature to the selectmen or board of health of the town; and if he refuses or neglects to give such notice, he shall forfeit not less than fifty nor more than two hundred dollars for each offence.

THE SUPERVISION OF WATER COMPANIES BY THE STATE BOARD OF HEALTH.

CHAPTER 319, ACTS OF 1909.

AN ACT TO PROVIDE FOR THE SUPERVISION OF WATER COMPANIES BY THE STATE BOARD OF HEALTH.

Be it enacted, etc., as follows:

SECTION 1. Upon complaint in writing relative to the service furnished in any city or town, or the charges therefor, made by any company engaged in the business of supplying water to such city or town or to the inhabitants thereof, signed by the mayor of the city or the selectmen of the town, or by fifty customers of the company, and filed in the office of the state board of health, said board shall notify the company by leaving at its office or place of business in such city or town a copy of the complaint, and may thereupon, after notice, give a public hearing to the complainant or complainants and to the company, and shall require the company to furnish such information in its possession as may be necessary to determine the matters involved in the

complaint, and after the hearing may make such recommendations concerning the reduction, modification or continuation of such charges for service, or concerning improvements in the quality of the service or extensions of the same, or concerning other matters in the premises, as the board shall deem just and proper. Any such recommendations shall be transmitted in writing by the board to the company complained of, and a report of the proceedings and of the result thereof shall be included in the annual report of the board, together with a statement of the action, if any, taken by the company upon the recommendation.

SECTION 2. This act shall take effect upon its passage. [*Approved April 26, 1909.*

AMENDMENT OF LAW RELATIVE TO THE SALE OF COCAINE.

CHAPTER 375, ACTS OF 1909.

AN ACT RELATIVE TO THE SALE OF COCAINE.

Be it enacted, etc., as follows:

SECTION 1. Section two of chapter three hundred and seven of the acts of the year nineteen hundred and eight is hereby amended by inserting after the word "restaurant", in the fifth and sixth lines, the words: — apartment house, dwelling house, — so as to read as follows: — *Section 2.* It shall be unlawful for any person, firm or corporation to sell, exchange, deliver, expose for sale, give away or have in his possession or custody with intent to sell, exchange, deliver or give away, in any street, way, square, park or other public place, or in any hotel, restaurant, apartment house, dwelling house, liquor saloon, barroom, public hall, place of amusement, or public building any cocaine or any of its salts, or any alpha or beta eucaine, or any of their salts, or any synthetic substitute for the aforesaid, or any preparation containing any of the same.

SECTION 2. Section four of chapter three hundred and eighty-six of the acts of the year nineteen hundred and six is hereby amended by adding at the end thereof the words: — and shall at all times be open to inspection by the officers of the state board of health and by the police authorities and officers of cities and towns, — so as to read as follows: — *Section 4.* It shall be unlawful for any person to sell, or to expose or offer for sale, or to give or exchange any cocaine or alpha or beta eucaine or any synthetic substitute of the aforesaid, or any preparation containing the same, or any salts or compounds thereof, except upon the written prescription of a physician, dentist or veterinary surgeon registered under the laws of the commonwealth; the original of which prescription shall be retained by the druggist filling the same and shall not again be filled, and shall at all times be open to inspection by the officers of the state board of health and by the police authorities and officers of cities and towns. [*Approved May 11, 1909.*

PROPRIETARY PREPARATIONS ADVERTISED AS UNSALABLE IN 1908, FROM WHICH THE PROHIBITION WAS AFTERWARDS REMOVED.

Mrs. Winslow's Soothing Syrup. The Anglo-American Drug Company, 215–217 Fulton Street, New York City.

Rock, Rye and Honey: the Great French Remedy. Edward Heffernan, sole proprietor, Lynn, Mass.

Celerina. Rio Chemical Company, New York.

Dr. Coderre's Infants' Syrup (Sirop des Enfants du Dr. Coderre).

PROPRIETARY PREPARATIONS ADVERTISED AS UNSALABLE IN APRIL, 1909.

Stearns's Wine (Vinum Olei Morrhuæ, Stearns): Stearns's Wine of Cod Liver Oil with Peptonate of Iron.[1] Frederick Stearns & Co., manufacturing pharmacists, Detroit, U. S. A., Windsor, Ont., Can.

A. & P. Root Beer. Prepared and put up only by the Great Atlantic and Pacific Tea Company, corner West and Vestry streets, New York.

PROPRIETARY PREPARATIONS: PROHIBITION OF SALE REMOVED.

The following-named preparations, as now presented to the trade, being no longer in conflict with the provisions of chapter 386 of the Acts of 1906, may be sold at retail: —

Dr. Swett's Root Beer Extract. Prepared by the Dr. Geo. W. Swett Root Beer Company, corner Albany and Harvard streets, Boston.

Bryant's Root Beer. (A root beer extract.) The Michigan Drug Company, 26–38 Congress Street, East, Detroit, Mich.

Rudolf's Kola Cardinette. Palisade Manufacturing Company, Yonkers, N. Y.

[1] Prohibition of sale later removed.

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OF

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STATE BOARD OF HEALTH.

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WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS OF MORE THAN 10,000 POPULATION.

WEEK ENDING MAY 1, 1909.

CITIES AND TOWNS.	Population.[1] Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	224	51	75	35	19	4	–	3
Worcester,	136,476	43	6	8	5	3	–	–	–
Fall River,	106,486	30	13	14	8	2	–	1	–
Cambridge,	102,112	19	4	7	3	4	–	–	–
Lowell,	96,380	34	12	12	5	6	–	–	–
New Bedford,	85,516	41	11	5	2	3	–	–	–
Lynn,	84,623	20	3	–	–	–	–	–	–
Springfield,	84,237	25	6	5	2	2	–	–	–
Lawrence,	78,000	30	14	15	6	4	1	2	–
Somerville,	76,049	24	6	7	4	–	1	1	–
Brockton,	55,039	8	–	4	1	3	–	–	–
Holyoke,	53,590	16	6	10	3	3	–	–	1
Malden,	41,941	14	7	6	4	1	–	–	–
Chelsea,	40,080	5	1	–	–	–	–	–	–
Newton,	39,642	4	3	1	–	–	–	–	1
Salem,	39,019	9	2	1	–	1	–	–	–
Haverhill,	38,362	9	1	2	–	1	1	–	–
Fitchburg,	34,263	7	3	2	1	–	–	–	–
Everett,	33,597	13	3	2	2	–	–	–	–
Quincy,	31,937	6	2	2	2	–	–	–	–
Taunton,	30,967	13	3	4	1	1	–	–	–
Waltham,	28,761	12	4	5	2	1	–	–	–
Pittsfield,	27,932	6	2	1	1	–	–	–	–
Brookline,	26,674	8	1	–	–	–	–	–	–
Gloucester,	26,011	6	1	1	–	1	–	–	–
North Adams,	22,150	7	–	2	–	2	–	–	–
Northampton,	21,075	8	2	1	–	1	–	–	–
Chicopee,	21,049	6	2	3	–	2	–	–	–
Medford,	20,921	7	1	2	1	1	–	–	–
Beverly,	16,386	2	1	–	–	–	–	–	–
Leominster,	16,030	1	–	–	–	–	–	–	–
Hyde Park,	15,609	3	1	–	–	–	–	–	–
Melrose,	15,459	4	0	1	1	–	–	–	–
Newburyport,	14,834	4	1	–	–	–	–	–	–
Revere,	14,820	4	2	1	1	–	–	–	–
Westfield,	14,750	1	–	1	1	–	–	–	–
Woburn,	14,522	6	1	4	1	3	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	4	2	1	1	–	–	–	–
Attleborough,	13,913	2	2	–	–	–	–	–	–
Adams,	13,685	1	–	–	–	–	–	–	–
Clinton,	13,105	7	3	3	1	1	–	–	–
Gardner,	13,066	4	1	–	–	–	–	–	–
Milford,	12,722	–	–	–	–	–	–	–	–
Watertown,	12,676	1	0	1	1	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	2	1	1	–	1	–	–	–
Weymouth,	11,798	1	–	–	–	–	–	–	–
Framingham,	11,749	2	–	1	1	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	3	–	–	–	–	–	–	–
Greenfield,	10,140	1	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,366,746	707	185	211	96	66	7	4	5

[1] The populations were estimated upon the rate of growth from 1900 to 1905. Those of Taunton, Gloucester, North Adams and Clinton were allowed to stand as in 1905, having shown no increase during the five-year period. The gain in the population of Lowell is due to the annexation of a part of the town of Tewksbury. The population of Lawrence by the census of 1905 was 70,050, but, owing to the building of the new Wood and Arlington mills, an increase of about 8,000 is estimated by the Lawrence board of health, or 78,000.

WEEK ENDING MAY 8, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM—					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever	Measles.
Boston,	624,491	237	62	91	30	28	4	1	4
Worcester,	136,476	36	9	7	5	1	–	–	–
Fall River,	106,486	31	9	10	2	2	–	1	–
Cambridge,	102,112	30	3	12	2	7	–	–	–
Lowell,	96,380	34	9	12	8	3	–	–	–
New Bedford,	85,516	21	10	14	5	3	1	–	–
Lynn,	84,623	28	4	8	–	7	1	–	–
Springfield,	84,237	34	7	13	8	3	–	–	–
Lawrence,	78,000	20	6	10	7	1	–	–	1
Somerville,	76,049	18	3	3	1	1	–	–	–
Brockton,	55,039	12	3	1	1	–	–	–	–
Holyoke,	53,590	23	8	11	5	5	–	–	–
Malden,	41,941	11	2	1	1	–	–	–	–
Chelsea,	40,080	6	1	2	–	2	–	–	–
Newton,	39,642	11	1	2	–	2	–	–	–
Salem,	39,019	20	2	2	1	–	–	–	–
Haverhill,	38,362	15	5	6	3	1	1	–	–
Fitchburg,	34,263	8	3	4	3	–	1	–	–
Everett,	33,597	5	1	1	–	–	–	–	–
Quincy,	31,937	3	1	–	–	–	–	–	–
Taunton,	30,967	16	6	9	6	1	–	–	–
Waltham,	28,761	4	1	1	–	1	–	–	–
Pittsfield,	27,932	6	–	3	–	3	–	–	–
Brookline,	26,674	5	–	–	–	–	–	–	–
Gloucester,	26,011	1	1	–	–	–	–	–	–
North Adams,	22,150	12	2	3	2	1	–	–	–
Northampton,	21,075	10	4	1	–	–	–	–	–
Chicopee,	21,049	7	3	3	1	2	–	–	–
Medford,	20,921	6	1	–	–	–	–	–	–
Beverly,	16,386	5	1	2	2	–	–	–	–
Leominster,	16,030	2	1	1	–	1	–	–	–
Hyde Park,	15,609	3	–	–	–	–	–	–	–
Melrose,	15,459	2	1	–	–	–	–	–	1
Newburyport,	14,834	4	–	1	1	–	–	–	–
Revere,	14,820	4	–	–	–	–	–	–	–
Westfield,	14,750	–	–	–	–	–	–	–	–
Woburn,	14,522	5	2	2	1	1	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	–	–	–	–	–	–	–	–
Attleborough,	13,913	6	0	2	1	–	–	1	–
Adams,	13,685	2	–	2	2	–	–	–	–
Clinton,	13,105	3	0	–	–	–	–	–	–
Gardner,	13,066	1	0	1	–	1	–	–	–
Milford,	12,722	3	0	1	1	–	–	–	–
Watertown,	12,676	3	1	1	1	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	2	–	–	–	–	–	–	–
Weymouth,	11,798	1	0	–	–	–	–	–	–
Framingham,	11,749	4	1	–	–	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	2	–	1	–	1	–	–	–
Greenfield,	10,140	4	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,350,262	726	174	244	100	78	8	3	6

WEEK ENDING MAY 15, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever	Measles.
Boston,	624,491	214	52	73	28	22	3	–	3
Worcester,	136,476	37	9	7	5	1	–	–	–
Fall River,	106,486	39	12	20	13	2	–	–	–
Cambridge,	102,112	33	7	14	4	8	–	–	–
Lowell,	96,380	32	13	9	4	2	1	–	–
New Bedford,	85,516	36	12	13	8	5	–	–	–
Lynn,	84,623	25	5	2	–	1	1	–	–
Springfield,	84,237	27	5	12	5	5	1	–	–
Lawrence,	78,000	24	8	15	7	5	–	–	1
Somerville,	76,049	21	3	7	2	3	–	–	–
Brockton,	55,039	16	4	3	–	1	1	–	–
Holyoke,	53,590	24	8	11	2	3	–	–	–
Malden,	41,941	6	4	2	2	–	–	–	–
Chelsea,	40,080	5	4	–	–	–	–	–	–
Newton,	39,642	11	1	3	3	–	–	–	–
Salem,	39,019	18	2	3	3	–	–	–	–
Haverhill,	38,362	13	2	2	1	–	–	–	–
Fitchburg,	34,263	5	3	3	1	2	–	–	–
Everett,	33,597	5	1	1	1	–	–	–	–
Quincy,	31,937	7	0	2	2	–	–	–	–
Taunton,	30,967	15	2	3	2	1	–	–	–
Waltham,	28,761	7	2	1	1	–	–	–	–
Pittsfield,	27,932	4	2	1	–	1	–	–	–
Brookline,	26,674	9	1	1	1	–	–	–	–
Gloucester,	26,011	11	3	–	–	–	–	–	–
North Adams,	22,150	7	3	1	–	–	–	–	–
Northampton,	21,075	12	4	2	1	1	–	–	–
Chicopee,	21,049	13	6	5	3	–	1	–	1
Medford,	20,921	8	2	3	–	1	–	–	–
Beverly,	16,386	1	1	–	–	–	–	–	–
Leominster,	16,030	7	2	1	–	1	–	–	–
Hyde Park,	15,609	3	2	–	–	–	–	–	–
Melrose,	15,459	4	1	2	2	–	–	–	–
Newburyport,	14,834	4	–	1	1	–	–	–	–
Revere,	14,820	1	–	–	–	–	–	–	–
Westfield,	14,750	9	4	4	3	1	–	–	–
Woburn,	14,522	3	–	–	–	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	3	1	1	1	–	–	–	–
Attleborough,	13,913	2	0	1	–	1	–	–	–
Adams,	13,685	3	–	–	–	–	–	–	–
Clinton,	13,105	3	1	–	–	–	–	–	–
Gardner,	13,066	7	1	2	1	1	–	–	–
Milford,	12,722	3	0	2	1	1	–	–	–
Watertown,	12,676	3	0	1	–	1	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	4	1	2	1	1	–	–	–
Weymouth,	11,798	5	1	2	1	1	–	–	–
Framingham,	11,749	2	–	1	1	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	4	–	1	1	–	–	–	–
Greenfield,	10,140	3	–	–	–	–	–	–	–

Recapitulation.

Total of reporting towns,	2,379,468	748	195	240	112	72	8	–	5

WEEK ENDING MAY 22, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM — Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston.	624,491	211	58	74	25	16	4	2	6
Worcester,	136,476	38	6	6	2	3	–	–	–
Fall River,	106,486	33	16	12	4	3	–	–	–
Cambridge,	102,112	32	2	20	6	12	1	–	–
Lowell,	96,380	32	4	8	5	2	–	–	–
New Bedford,	85,516	29	13	9	6	–	–	–	–
Lynn,	84,623	18	5	2	–	–	1	–	–
Springfield,	84,237	13	8	6	3	–	1	–	1
Lawrence,	78,000	25	10	11	5	4	–	–	–
Somerville,	76,049	15	2	3	2	–	–	–	–
Brockton,	55,039	11	2	2	–	1	–	–	–
Holyoke,	53,590	22	3	11	5	5	–	–	–
Malden,	41,941	8	3	–	–	–	–	–	–
Chelsea,	40,080	7	2	–	–	–	–	–	–
Newton,	39,642	9	3	1	–	–	–	–	1
Salem,	39,019	6	–	1	1	–	–	–	–
Haverhill,	38,362	14	4	4	3	1	–	–	–
Fitchburg,	34,263	7	2	3	2	–	–	–	1
Everett,	33,597	8	1	1	1	–	–	–	–
Quincy,	31,937	5	2	1	–	1	–	–	–
Taunton,	30,967	6	3	3	–	1	–	–	–
Waltham,	28,761	8	0	–	–	–	–	–	–
Pittsfield,	27,932	15	3	6	5	1	–	–	–
Brookline,	26,674	5	–	2	2	–	–	–	–
Gloucester,	26,011	5	–	–	–	–	–	–	–
North Adams,	22,150	5	3	2	1	–	–	–	–
Northampton,	21,075	10	3	2	–	2	–	–	–
Chicopee,	21,049	4	3	1	1	–	–	–	–
Medford,	20,921	4	–	1	–	1	–	–	–
Beverly,	16,386	8	1	2	2	–	–	–	–
Leominster,	16,030	2	–	1	1	–	–	–	–
Hyde Park,	15,609	3	1	–	–	–	–	–	–
Melrose,	15,459	1	0	1	–	1	–	–	–
Newburyport,	14,834	8	–	4	1	2	–	–	–
Revere,	14,820	4	–	–	–	–	–	–	–
Westfield,	14,750	5	1	1	–	1	–	–	–
Woburn,	14,522	7	1	1	1	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	1	1	–	–	–	–	–	–
Attleborough,	13,913	2	0	–	–	–	–	–	–
Adams,	13,685	1	1	1	1	–	–	–	–
Clinton,	13,105	4	0	1	–	1	–	–	–
Gardner,	13,066	7	1	3	–	2	–	1	–
Milford,	12,722	–	–	–	–	–	–	–	–
Watertown,	12,676	2	0	1	1	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	6	4	1	–	–	–	–	–
Weymouth,	11,798	7	2	1	–	–	–	–	–
Framingham,	11,749	6	3	2	2	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	0	–	–	–	–	–	–	–
Greenfield,	10,140	4	–	1	–	1	–	–	–
Recapitulation.									
Total of reporting towns,	2,366,746	683	177	213	88	61	7	3	9

WEEK ENDING MAY 29, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	206	38	61	15	23	4	1	1
Worcester,	136,476	38	6	10	5	4	–	–	–
Fall River,	106,486	21	7	8	3	2	–	–	–
Cambridge,	102,112	32	7	18	7	7	–	–	–
Lowell,	96,380	38	12	9	4	4	1	–	–
New Bedford,	85,516	24	11	7	5	–	–	–	–
Lynn,	84,623	22	1	6	–	4	–	–	–
Springfield,	84,237	18	1	6	2	4	–	–	–
Lawrence,	78,000	29	9	13	6	4	–	1	1
Somerville,	76,049	25	8	6	3	1	–	–	1
Brockton,	55,039	11	3	2	–	–	–	1	–
Holyoke,	53,590	18	8	3	1	1	–	–	–
Malden,	41,941	13	3	2	1	1	–	–	–
Chelsea,	40,080	9	1	2	–	2	–	–	–
Newton,	39,642	14	4	2	–	1	–	–	1
Salem,	39,019	16	2	4	4	–	–	–	–
Haverhill,	38,362	12	1	3	2	1	–	–	–
Fitchburg,	34,263	12	2	2	–	1	–	1	–
Everett,	33,597	8	2	2	–	2	–	–	–
Quincy,	31,937	7	3	1	–	1	–	–	–
Taunton,	30,967	7	4	5	–	1	–	–	–
Waltham,	28,761	9	1	3	1	1	1	–	–
Pittsfield,	27,932	3	2	–	–	–	–	–	–
Brookline,	26,674	8	1	3	–	2	–	–	–
Gloucester,	26,011	8	–	–	–	–	–	–	–
North Adams,	22,150	7	4	3	2	1	–	–	–
Northampton,	21,075	5	0	2	1	1	–	–	–
Chicopee,	21,049	5	0	2	1	1	–	–	–
Medford,	20,921	2	–	1	–	1	–	–	–
Beverly,	16,386	7	4	3	1	2	–	–	–
Leominster,	16,030	4	1	–	–	–	–	–	–
Hyde Park,	15,609	3	–	–	–	–	–	–	–
Melrose,	15,459	8	0	1	1	–	–	–	–
Newburyport,	14,834	4	–	2	2	–	–	–	–
Revere,	14,820	7	3	4	3	1	–	–	–
Westfield,	14,750	7	2	3	1	–	–	–	–
Woburn,	14,522	2	–	2	1	1	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	5	0	–	–	–	–	–	–
Attleborough,	13,913	4	1	–	–	–	–	–	–
Adams,	13,685	–	–	–	–	–	–	–	–
Clinton,	13,105	4	0	1	–	1	–	–	–
Gardner,	13,066	2	–	1	–	1	–	–	–
Milford,	12,722	5	1	1	–	–	–	–	–
Watertown,	12,676	2	0	1	1	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	3	–	–	–	–	–	–	–
Weymouth,	11,798	4	1	–	–	–	–	–	–
Framingham,	11,749	3	1	–	–	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	3	–	–	–	–	–	–	–
Greenfield,	10,140	1	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,321,245	701	255	205	73	77	6	4	4

WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.

DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF MAY 1, 8, 15, 22 AND 29, 1909.

DISEASE.	Place.	WEEK ENDING—				
		May 1.	May 8.	May 15.	May 22.	May 29.
Cerebro-spinal meningitis,	Boston,	1	–	–	1	1
	Lowell,	–	–	–	1	–
	Northampton,	–	1	–	–	–
	Somerville,	1	–	2	–	–
Scarlet fever,	Boston,	3	2	3	2	2
	Brockton,	–	–	1	1	–
	Lynn,	–	–	–	1	–
	Lowell,	–	1	–	–	–
	Medford,	–	–	2	–	–
	Milford,	–	–	–	–	1
	New Bedford,	–	1	–	–	–
	Springfield,	–	–	–	1	–
	Taunton,	–	–	–	1	1
	Waltham,	1	–	–	–	–
	Worcester,	–	1	–	–	–
Whooping cough,	Boston,	1	2	–	–	–
	Brookline,	–	–	–	–	1
	Chicopee,	1	–	–	–	–
	Clinton,	1	–	–	–	–
	Everett,	–	1	–	–	–
	Haverhill,	–	–	1	–	–
	Lynn,	–	–	–	–	1
	Malden,	1	–	–	–	–
	New Bedford,	–	1	–	–	1
	North Adams,	–	–	–	1	–
	Southbridge,	–	–	–	1	–
	Springfield,	1	–	–	–	–
	Taunton,	1	1	–	–	–
	Westfield,	–	–	–	–	2
	Weymouth,	–	–	–	1	–
Erysipelas,	Boston,	1	4	3	2	–
	Brockton,	–	–	–	–	1
	Cambridge,	–	1	–	–	–
	Fitchburg,	1	–	–	–	–
	Lawrence,	–	1	–	–	–
	New Bedford,	–	1	–	–	–
	Springfield,	–	–	1	–	–
	Waltham,	1	–	–	–	–
	Worcester,	–	–	1	–	–

DISEASE.	Place.	Week ending — May 1.	May 8.	May 15	May 22.	May 29.
Tuberculosis, other than pulmonary.	Boston,	3	4	4	4	9
	Cambridge,	–	1	2	1	2
	Holyoke,	–	–	1	–	–
	Lawrence,	–	–	1	1	–
	Newburyport,	–	–	–	2	–
	Pittsfield,	–	–	–	1	–
	Springfield,	–	2	–	–	–
	Taunton,	–	–	–	–	1
	Westfield,	–	–	–	1	–
Tubercular meningitis,	Lynn,	–	–	–	–	1
	Salem,	–	1	–	–	–
Influenza,	Boston,	1	1	–	1	–
	Cambridge,	–	–	–	–	1

WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

Cases of Infectious Diseases reported during the Weeks of May 1, 8, 15, 22 and 29, 1909.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending — May 1.	May 8.	May 15.	May 22.	May 29.
Diphtheria,	106	113	103	127	118
Measles,	536	468	580	458	395
Scarlet fever,	162	134	155	139	135
Typhoid fever,	35	35	18	24	27
Tuberculosis, pulmonary,	186	196	167	213	141
Cerebro-spinal meningitis,	3	1	4	4	3
Whooping cough,	48	33	45	29	17
Varicella,	46	47	53	44	45
Erysipelas,	1	–	–	–	–
Mumps,	2	3	2	3	5
Ophthalmia neonatorum,	1	–	–	2	–
Tuberculosis other than pulmonary,	4	2	4	–	–
Smallpox,	–	–	–	1	–
Leprosy,	1	–	–	–	–
Tuberculosis, meningitis,	–	1	–	1	–

MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of May, 1909: —

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Beer,	1	–	1	Meat products— *Con.*			
Butter,	3	5	8	Sausages,	11	2	13
Cheese,	1	–	1	Sausage meat,	1	–	1
Cocoa,	2	–	2	Milk,	431	91	522
Coffee extract,	1	–	1	Olive oil,	19	7	26
Condensed milk,	1	–	1	Pickles,	2	1	3
Cream,	13	–	13	Proprietary foods,	1	2	3
Cream of tartar,	1	–	1	Sardine paste,	–	1	1
Drugs,	61	15	76	Shrimp paste,	1	–	1
Extract of lemon,	1	–	1	Shrimp,	1	–	1
Grape juice,	2	–	2	Lobster,	1	–	1
Jams and jellies,	2	–	2	Salad dressing,	1	–	1
Lard,	1	–	1	Spices,	4	–	4
Maple sugar,	3	–	3	Syrup,	1	–	1
Maple syrup,	1	–	1	Table sauce,	2	–	2
Meat products: —				Vinegar,	23	10	33
Pigs feet,	1	–	1				
Pressed beef,	1	–	1	Total,	595	134	729

The samples of drugs found to be adulterated were: olive oil, expressed oil of almond, spirit of peppermint, mercurial ointment, iodine ointment and several proprietary medicines.

The cities and towns in which samples were collected were: Adams, Amesbury, Attleborough, Ayer, Boston, Braintree, Brockton, Brookline, Chicopee, Danvers, Dedham, Everett, Fitchburg, Holyoke, Ipswich, Lawrence, Littleton, Lowell, Lynn, Malden, Milford, New Bedford, Newburyport, North Adams, Northampton, Palmer, Peabody, Pittsfield, Quincy, Reading, Salem, South Framingham, Somerville, Springfield, Stoneham, Taunton, Ware, Westfield, Westminster and Worcester.

PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING TO FOOD AND DRUGS.

Thirty-two convictions were secured during the month of May, 1909, for selling adulterated food and drugs, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	George N. Pilalis,	Springfield,	Maple sugar.
2	Chas. L. Davis,	Newburyport,	Mercurial ointment (53.2 per cent. U. S. P).
3	John H. C. Pratt,	Everett,	Mercurial ointment (18.2 per cent. U. S. P.).
4	Fred. A. Spencer,	Everett,	Mercurial ointment.[1]
5	Munroe B. Chesley,	Amesbury,	Milk (skimmed).
6	Munroe B. Chesley,	Amesbury,	Milk (watered).
7	William E. Dailey,	South Braintree,	Milk (total solids, 9.94).
8	George H. Gould,	Taunton,	Milk (total solids, 10.71; watered).
9	John Larnard,	Amesbury,	Milk.
10	John C. Monyihan,	Newburyport,	Milk (total solids, 10.66).
11	John C. Monyihan,	Newburyport,	Milk (watered).
12	Samuel Mills,	Westminster,	Milk (total solids, 11.14).
13	Loues Reynolds,	Westminster,	Milk (total solids, 11.46).
14	George Yapp,	Littleton,	Milk (total solids, 11.02).
15	Peter Patropoulos,	Malden,	Olive oil (contained 50 per cent. cotton-seed oil).
16	Joseph Russo,	Malden,	Olive oil (cotton-seed oil).
17	Constantino Spiropoulos,	Boston,	Olive oil.
18	Constantino Spiropoulos,	Boston,	Olive oil.
19	Constantino Spiropoulos,	Boston,	Olive oil.
20	Albert H. Dailey,	Springfield,	Renovated butter.
21	Herman Isenberg,	Springfield,	Shrimp.[2]
22	Herman Isenberg,	Springfield,	Tomato sausage.[2]
23	Wm. W. Babcock,	Springfield,	Vinegar.
24	John Bolan,	Springfield,	Vinegar.
25	William H. Cleary,	Springfield,	Vinegar.
26	Stephen J. Collins,	Springfield,	Vinegar.
27	Herman J. Haring,	Springfield,	Vinegar.
28	Edward S. Hanks,	West Springfield,	Vinegar.
29	Alexander Pezzini,	West Springfield,	Vinegar.
30	Clarence D. Robinson,	Springfield,	Vinegar.
31	Wm. O. Sheldon,	Springfield,	Vinegar.
32	Sylvester L. Traver,	Springfield,	Vinegar.

[1] Appealed.

[2] Contained a preservative.

Fines imposed, $489.

LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR MAY, 1909.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
9667	Cuban Relish,	Cruikshank Brothers Company, Pittsburg, U. S. A.,	Improperly labeled; preserved with benzoic acid; not stated on main label.
9793 P.	Olive oil,	Olio d'oliva Sopraffino di Lucca,	Contained cotton-seed oil.
9795 P.	Olive oil,	Olio d'oliva Sopraffino Lucca Brand,	Contained cotton-seed oil.
9797 P.	Olive oil,	Olio Puro d'oliva garantito Torelli Brand,	Contained cotton-seed oil.
9799 P.	Olive oil,	Olio Finessimo di oliva vergine Re Ditalia Brand,	Contained cotton-seed oil.
9801 P.	Olive oil,	Olio Finessimo di oliva Gaetans Peluso Fui Pasquale,	Contained cotton-seed oil.
9740	Olive oil,	Olio San Pirtro Brand,	Percentage of ingredients not stated.
9742	Olive oil,	Compound Olive Oil and Cotton-seed Oil, Trapani Brand,	Percentage of ingredients not stated.
9353	Pain Vanquisher,	Standard Soap Works, Boston,	Contained 84.76 per cent. alcohol (percentage not stated).
9766	Blood Wine Tonic and Alterative.	Cushing Medical Supply Company, Boston,	Contained 20.13 per cent. alcohol (percentage not stated).
9873	Milk,	Munroe Berry Chesley, Amesbury, Mass.,	Total solids, 10.40 per cent.; contained added water.
9875	Milk,		Total solids, 10.06 per cent.; contained added water.
9877	Milk,		Total solids, 10.13 per cent.; contained added water.
9879	Milk,		Total solids, 11.00 per cent.; contained added water.
9646	Milk,	John C. Monyihan, Newburyport, Mass.,	Total solids, 10.66 per cent.; contained added water.
1028 n	Milk,	Levi F. King, North Dartmouth, Mass.,	Total solids, 11.30 per cent.; contained added water.
9999 P.	Milk,	Charles C. Putnam, Peabody, Mass.,	Total solids, 10.80 per cent.; contained added water.
1264 n	Milk,	Adelbert L. Huntington, Pittsfield, Mass.,	Total solids, 11.29 per cent.; contained added water.
9771 P.	Milk,	Munroe Berry Chesley, Amesbury, Mass.,	Total solids, 11.00 per cent.; fat, 2.80 per cent.; proteids, 3.24 per cent.; skimmed milk.

INSPECTION OF DAIRIES.

During the month of May, 1909, 108 dairies were examined in the following places: —

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number to which Letters were sent.	Per Cent.
Granby,	–	–	–	–	–
Second inspection,	1	–	–	1	100.00
Holyoke,	3	2	66.67	1	33.33
Second inspection,	27	7	25.93	20	74.07
Northampton,	–	–	–	–	–
Second inspection,	5	–	–	5	100.00
Southampton,	22	3	13.64	19	86.36
South Hadley,	5	1	20.00	4	80.00
Second inspection,	45	16	35.56	29	64.44

Total number of dairies examined,	108
Number found to be free from objectionable conditions,	29
Number to which letters were sent,	79
Total number of conditions to which attention was called,	229
Percentage of dairies which passed inspection,	26.85

The names of the owners of dairies found to be worthy of commendation follow: —

Holyoke.

Goodyear, George L.[1]	Kohler, Louis C.	Shea, Patrick F.[2]
Humeston, Thomas R.[2]	Kurtz, Adam	Whiting, William [1]
Jenks, William W.[2]	Shauer, David C.[2]	Wright, A. E.

Southampton.

Brass, R. T.	Parsons, W. A.	Searles, O. M.

South Hadley.

Boynton, C. S.[1]	Griffin, James [2]	Lyman, John E.[2]
Brockway, Horace T.[1]	Judd, C. A.[2]	Smith, Mrs. G. C.
Day, I. N.[2]	Judd, W. S. & Son [2]	South Hadley Town Farm [2]
Fillion, Joseph [2]	LeGrand, Frank [2]	Strong, A.[2]
Fitzgerald, John [2]	Long, P. J.[2]	Thompson, A. J.[2]
Gagne, A.[1]	Lyman, Eugene H.[2]	

[1] Reported favorably on first inspection as well. [2] Second inspection.

OPHTHALMIA NEONATORUM AND TRACHOMA.

At a meeting of the State Board of Health, held on May 6, 1909, it was voted that *ophthalmia neonatorum* and *trachoma* be declared diseases dangerous to the public health, and therefore notifiable under sections 49 and 50 of chapter 75 of the Revised Laws.

NEW LAW RELATIVE TO THE APPOINTMENT OF INSPECTORS AND COLLECTORS OF MILK.

Acts of 1909, Chapter 405.

An Act to provide for the appointment of inspectors and collectors of milk by boards of health.

Be it enacted, etc., as follows:

Section 1. The boards of health of cities shall, and boards of health of towns or the selectmen acting as such boards, may, appoint one or more inspectors of milk for their respective cities and towns. In cities such inspectors, after appointment, may be removed from office in accordance with the provisions of chapter three hundred and fourteen of the acts of the year nineteen hundred and four; in towns they may be removed at any time by the appointing board. Such inspectors shall have the powers and perform the duties now conferred and imposed by law upon the inspectors of milk, but they shall be under the control of the boards of health appointing them, and shall perform such other duties as the said boards may designate. Their compensation shall be determined by the boards of health in cities, and by the selectmen in towns appointing them.

Section 2. The collectors of milk provided for by section fifty-two of chapter fifty-six of the Revised Laws shall hereafter be appointed by the board of health, or by the selectmen acting as such a board, in each city or town, and the said boards may also designate and employ any member of the board or any agent or employee thereof, to act as a collector of milk, and the collectors of milk so appointed or designated shall have the powers and perform the duties conferred or imposed by law upon collectors of milk.

Section 3. Section fifty-three of said chapter which provides for the licensing of vendors of milk in vehicles is hereby amended by adding at the end thereof the following: — If the applicant for a license fails to comply with any regulation established by the board of health in the city or town where the application is made, a license may be refused until he has complied with such regulation; and a license granted under this section may

be revoked at any time for failure to comply with any such regulation. If a license is refused or revoked under this provision, an appeal may be taken to the state board of health, whose decision shall be final and conclusive.

Section 4. So much of sections fifty-one and fifty-two of said chapter fifty-six as is inconsistent herewith is hereby repealed.

Section 5. This act shall take effect upon its passage; but inspectors and collectors of milk in office at the time of the passage of this act shall continue in office until their successors are appointed hereunder. [*Approved May 19, 1909.*

AMENDMENT OF LAW FOR THE PROTECTION OF DAIRYMEN.

Acts of 1909, Chapter 425.

An Act to provide further for the protection of dairymen.

Be it enacted, etc., as follows:

Section 1. Chapter two hundred and two of the acts of the year nineteen hundred and one is hereby amended by striking out section four and inserting in place thereof the following: — *Section 4.* No person shall, either by himself or in the employ of any other person, firm or corporation, manipulate the Babcock test, or any other test, whether mechanical or chemical, for the purpose of measuring the butter fat contained in milk or cream as a basis for determining the value of such milk or cream, or of butter or cheese made from the same, without first obtaining a certificate from the director of the Massachusetts agricultural experiment station that he or she is competent to perform such work. Rules governing applications for such certificates and the granting of the same shall be established by the said director. The fee for issuing the said certificate shall in no case exceed two dollars, shall be paid by the applicant to the said director, and shall be used in meeting the expenses incurred under this act. If the duly authorized inspector finds an operator who, after receiving his certificate of competency, is not, in the judgment of the inspector, correctly manipulating the Babcock or other test used as a basis for determining the value of milk and cream, or who is using dirty, untested or otherwise unsatisfactory glassware, he shall immediately report the case in writing to the director of the station. The director shall at once notify said operator in writing and give him not less than thirty days to make the necessary improvements. At the expiration of that time the director may order a second inspection, the cost of which shall be borne by the operator or by the person, firm or corporation employing him, and if the required improvement has not been made, the director is empowered to notify in writing said operator, or the person, firm or corporation employing him, that his certificate

of competency is revoked. In case of any subsequent violation the said director may revoke the certificate of competency without giving the notice aforesaid.

Section 2. This act shall take effect upon its passage. [*Approved May 21, 1909.*

LICENSING DEALERS IN MILK.

Acts of 1909, Chapter 443.

An Act relative to licensing dealers in milk.

Be it enacted, etc., as follows:

Section 1. No person, partnership or corporation, except a producer selling milk to other than consumers, or not to exceed twenty quarts per day to consumers, shall deliver, exchange, expose for sale or sell or have in his custody or possession with the intent to deliver, exchange, expose for sale or sell any milk, skimmed milk or cream in any city or town in which an inspector of milk is appointed, without obtaining from the inspector of milk of such city or town a license. The license shall contain the number thereof, the name, place of business, residence, number of carriages or other vehicles used by the licensee and the name of every driver or other person employed by him in carrying or selling milk. A license issued to a partnership or corporation shall be issued in the business name of said partnership or corporation and it shall contain the names in full of the partners and managers of said partnership or officers of said corporation. The license shall, for the purposes of this chapter, be conclusive evidence of ownership and shall not be sold, assigned or transferred. Whoever in such cities or towns engages himself or by his servant or agent in the business of selling milk, skimmed milk or cream from any carriage or other vehicle shall display conspicuously on the outer side of all carriages or other vehicles so used, the license number in figures not less than one and one half inches in height and the name and place of business of the licensee in gothic letters not less than one and one half inches in height. Whoever in such cities or towns engages himself or by his servant or agent in the business of selling milk, skimmed milk or cream in a store, booth, stand, or market place shall have his license conspicuously posted in such store, booth, stand or market place.

Section 2. Whoever, without being licensed in accordance with the preceding section, delivers, exchanges, exposes for sale or sells milk, skimmed milk or cream, or has it in his custody or possession with intent to deliver, exchange, expose for sale or sell, and whoever violates any of the provisions of the preceding section shall for a first offence be punished by a fine of not less than ten dollars nor more than one hundred dollars, for a second offence by a fine of not less than fifty dollars nor more than three hundred

dollars and for a subsequent offence by a fine of fifty dollars and by imprisonment for not less than thirty nor more than sixty days.

Section 3. Inspectors of milk in any city or town may, for the purposes mentioned in the preceding sections, grant licenses, subject to the regulations established by the board of health of such city or town, to suitable persons, and shall receive for each license so granted a fee of fifty cents for the use of such city or town, and all license fees collected by him shall be paid over monthly to the city or town treasurer. Such licenses shall remain in force until the first day of June next following, unless previous to that time said license is suspended or revoked. Said inspector of milk may declare any license granted by him suspended or forfeited upon a conviction of the licensee in any court of this commonwealth, for violation of the terms of his license.

Section 4. If the applicant for a license fails to comply with any regulation established by the board of health in the city or town where the application is made, a license may be refused until he has complied with such regulation; and a license granted under the provisions of this act may be revoked at any time for failure to comply with any such regulation as aforesaid. If a license is refused or revoked under this provision, an appeal may be taken to the state board of health, whose decision shall be final and conclusive.

Section 5. Sections fifty-three and fifty-four of chapter fifty-six of the Revised Laws are hereby repealed, but this repeal shall not affect any pending suit or other proceeding. [*Approved May 24, 1909.*

STATE BOARD OF HEALTH TO INVESTIGATE THE SLAUGHTERING OF NEAT CATTLE, SHEEP AND SWINE.

Acts of 1909, Chapter 118.

Resolve to authorize the state board of health to investigate the slaughtering of neat cattle, sheep and swine.

Resolved, That the state board of health is hereby authorized and directed to investigate the methods and circumstances of the slaughtering of neat cattle, sheep and swine and the inspection of the products thereof, and the operation of chapter five hundred and thirty-seven of the acts of the year nineteen hundred and seven and the acts in amendment thereof and in addition thereto, and to report the result of its investigation to the general court on or before January fifteenth next, with such recommendations as the board may deem advisable. [*Approved June 3, 1909.*

BRANDING OF CARCASSES.

Acts of 1909, Chapter 471.

An Act relative to the stamping and branding of the carcasses of certain domestic animals.

Be it enacted, etc., as follows:

Section one hundred and three of chapter seventy-five of the Revised Laws, as set forth in chapter two hundred and twenty of the acts of the year nineteen hundred and three, is hereby amended by striking out the word "is", in the third line, and inserting in place thereof the word: — are, — and by striking out the words "in force on the fifteenth day of June in the year nineteen hundred and one", in the sixth and seventh lines, — so as to read as follows: — *Section 103.* In a slaughtering establishment wherein inspection and branding are not carried on under the rules and regulations for the inspection of live stock and other products, established by the United States department of agriculture in accordance with acts of congress, the carcasses of animals slaughtered under the provisions of the four preceding sections shall at the time of slaughter, if not condemned, be stamped or branded by the inspector thereof in like manner as those inspected by the United States bureau of animal industry for interstate trade, by a stamp or brand designed for the purpose by the cattle bureau of the state board of agriculture, which shall be furnished by it to the board of health of a city or town applying therefor. Such stamps shall be uniform in design throughout the commonwealth, but shall contain the name of the city or town in which they are used. [*Approved June 4, 1909.*

SLAUGHTER OF ANIMALS AND INSPECTION AND SALE OF CARCASSES.

Acts of 1909, Chapter 474.

An Act relative to the slaughter of animals and to the inspection and sale of carcasses thereof.

Be it enacted, etc., as follows:

Section 1. Chapter three hundred and twenty-nine of the acts of the year nineteen hundred and eight is hereby amended by adding at the end thereof the following new section: — *Section 8.* This act shall not affect the provisions of section seven of chapter ninety of the Revised Laws, as affected by section three of chapter one hundred and sixteen of the acts of the year nineteen hundred and two: *provided, however,* that nothing in

this act shall be construed to permit the sale, offer for sale, or keeping with intent to sell, for food, of meat infected in any degree with tuberculosis or any other disease.

Section 2. This act shall take effect upon its passage. [*Approved June 4, 1909.*

INSPECTION OF DOMESTIC ANIMALS AND MARKING OF CARCASSES.

Acts of 1909, Chapter 476.

An Act relative to the marking of certain carcasses and the inspection of certain domestic animals.

Be it enacted, etc., as follows:

Section 1. Section one hundred and four of chapter seventy-five of the Revised Laws, as set forth in chapter two hundred and twenty of the acts of the year nineteen hundred and three, is hereby amended by inserting after the word "provided", in the tenth line, the words: — or whoever not being a member of the board of health, or a duly appointed inspector stamps or brands a carcass or any part thereof required by the provisions of the preceding section to be stamped or branded, or whoever being a member of a board of health or a duly appointed inspector permits or allows the use of his stamp or brand by one not a member of a board of health or a duly appointed inspector, or whoever counterfeits any stamp or brand required by the provisions of the five preceding sections, or whoever stamps or brands any carcass or any part thereof with any counterfeit stamp or brand, — so as to read as follows: — *Section 104.* The carcasses of animals slaughtered under the provisions of the five preceding sections and not stamped or branded as provided in the preceding section shall be deemed unfit for human food and shall not be sold or offered for sale. Whoever sells, or offers for sale, or has in his possession with intent to sell, a carcass or any part thereof required by the provisions of the preceding section to be stamped or branded, which has not been stamped or branded as therein provided, or whoever not being a member of a board of health, or a duly appointed inspector stamps or brands a carcass or any part thereof required by the provisions of the preceding section to be stamped or branded, or whoever being a member of a board of health or a duly appointed inspector permits or allows the use of his stamp or brand by one not a member of a board of health or a duly appointed inspector, or whoever counterfeits any stamp or brand required by the provisions of the five preceding sections, or whoever stamps or brands any carcass or any part thereof with any counterfeit stamp or brand shall be punished by a fine of not more than one hundred dollars or by imprisonment for not more than sixty days, or by both such fine and imprisonment. [*Approved June 7, 1909.*

AMENDMENT OF LAW RELATIVE TO THE CARE AND REMOVAL OF PERSONS INFECTED WITH DISEASES DANGEROUS TO THE PUBLIC HEALTH.

Acts of 1909, Chapter 391.

An Act relative to the care and removal by the state board of charity of persons infected with diseases dangerous to the public health.

Be it enacted, etc., as follows:

Section 1. Section one of chapter three hundred and ninety-five of the acts of the year nineteen hundred and four is hereby amended by striking out the words "and may remove such person thereto" at the end of said section, and inserting in place thereof the words: — and shall have the same authority to remove such persons thereto as is conferred upon boards of health by the provisions of section thirty-six of chapter seventy-five of the Revised Laws, as amended by chapter three hundred and sixty-five of the acts of the year nineteen hundred and six, — so as to read as follows: — *Section 1.* The state board of charity may, if found expedient, remove any person who is infected with a disease dangerous to the public health, and who is maintained or liable to be maintained by the commonwealth, to any hospital provided for state paupers, or may provide such place of reception for such person as is judged best for his accommodation and the safety of the public, which place shall be subject to the regulations of the board, and shall have the same authority to remove such persons thereto as is conferred upon boards of health by the provisions of section thirty-six of chapter seventy-five of the Revised Laws, as amended by chapter three hundred and sixty-five of the acts of the year nineteen hundred and six.

Section 2. Any expenses incurred in carrying out the provisions of this act may be paid from the annual appropriation for expenses in connection with smallpox and other diseases dangerous to the public health.

Section 3. This act shall take effect upon its passage. [*Approved May 14, 1909.*

AMENDMENT OF LAW RELATIVE TO THE EXPENSE OF CARING FOR PERSONS INFECTED WITH DISEASES DANGEROUS TO THE PUBLIC HEALTH.

Acts of 1909, Chapter 380.

An Act relative to the expense of caring for persons infected with diseases dangerous to the public health.

Be it enacted, etc., as follows:

Section 1. Section one of chapter two hundred and thirteen of the acts of the year nineteen hundred and two, as amended by section one of chapter three hundred and eighty-six of the acts of the year nineteen hundred and seven, is hereby further amended by adding at the end thereof the words: — and also in any case liable to be maintained by the commonwealth when public aid has been rendered to such sick person, a written notice shall be sent to the state board of charity, containing such information as will show that the person named therein is a proper charge to the commonwealth, and reimbursement shall be made for the reasonable expenses incurred within five days next before such notice is mailed, and thereafter until such sick person is removed under the provisions of chapter three hundred and ninety-five of the acts of the year nineteen hundred and four, or is able to be so removed without endangering his or the public health, — so as to read as follows: — *Section 1.* Reasonable expenses incurred by the board of health of a city or town or by the commonwealth in making the provision required by law for persons infected with smallpox or other disease dangerous to the public health shall be paid by such person or his parents if he or they be able to pay, otherwise by the city or town in which he has a legal settlement, upon the approval of the bill by the board of health of such city or town or by the state board of charity; and such settlements shall be determined by the overseers of the poor, and by the state board of charity in cases cared for by the commonwealth. If the person has no settlement, such expense shall be paid by the commonwealth, upon the approval of bills therefor by the state board of charity. In all cases of persons having settlements, a written notice sent within the time required in the case of aid given to paupers, shall be sent by the board of health, or by the officer or board having the powers of a board of health in the city or town where the person is sick, to the board of health, or to the officer or board having the powers of a board of health in the city or town in which such person has a settlement, who shall forthwith transmit a copy thereof to the overseers of the poor of the place of settlement. In case the person has no settlement, such notice shall be given to the state board of health, in accordance with the provisions of section fifty-two of chapter seventy-five of the Revised Laws, and also in any case liable to be maintained by the commonwealth when public aid has been rendered to such sick person, a written notice shall

be sent to the state board of charity, containing such information as will show that the person named therein is a proper charge to the commonwealth, and reimbursement shall be made for the reasonable expenses incurred within five days next before such notice is mailed, and thereafter until such sick person is removed under the provisions of chapter three hundred and ninety-five of the acts of the year nineteen hundred and four, or is able to be so removed without endangering his or the public health.

SECTION 2. This act shall take effect on the first day of July in the year nineteen hundred and nine. [*Approved May 13, 1909.*

WORKS FOR THE TREATMENT OR PURIFICATION OF SEWAGE.

ACTS OF 1909, CHAPTER 433.

AN ACT TO PROVIDE FOR THE PROPER MAINTENANCE AND ENLARGEMENT OF WORKS FOR THE TREATMENT OR PURIFICATION OF SEWAGE.

Be it enacted, etc., as follows:

SECTION 1. Cities, towns, persons, firms or corporations, owning or operating filter beds or other works for the treatment or purification of sewage shall provide and maintain works adequate for the treatment of the sewage at all times, and shall operate such works in such manner as will prevent a nuisance therefrom or the discharge or escape of unpurified or imperfectly purified sewage or effluent into any stream, pond or other water, or other objectionable result.

SECTION 2. The board of sewer commissioners or other board or officer having charge of the sewers in cities and towns shall have authority to make such regulations regarding the use of the sewers as are necessary to prevent the entrance or discharge therein of any substance which may tend to interfere with the flow of sewage or the proper operation of the sewerage system or disposal works.

SECTION 3. The state board of health, if convinced, upon examination, that a filter bed or other works for the treatment or purification of sewage causes the pollution of a stream, pond or other water, or is likely to become a source of nuisance or create objectionable results in its neighborhood by reason of defective construction, inadequate capacity or negligence or inefficiency in maintenance or operation or from other cause, may issue notice in writing to the city, town or person owning or operating such works requiring such enlargement or improvement in the works or change in the method of operation thereof as may be necessary for the proper maintenance and operation of the works and the efficient purification and disposal of the sewage. In case the state board of health is satisfied after investigation that the unsatisfactory operation of a sewage disposal system is due wholly or partly to the discharge into the system of manufacturing waste

or other substance of such character as to interfere with the efficient operation of said works, said board may if necessary prohibit the entrance of such waste or other material or may regulate the entrance thereof into the system, or may require the treatment of such waste or other material in such manner as may be necessary to prevent its interference with the operation of the works.

SECTION 4. The supreme judicial court, or the superior court, shall have jurisdiction in equity to enforce the provisions of this act upon petition of the state board of health or of any party interested.

SECTION 5. This act shall take effect upon its passage. [*Approved May 21, 1909.*

DR. DAVIS'S ANTI-HEADACHE: PROHIBITION OF SALE REMOVED.

This preparation, as now presented to the trade, being properly labeled, may be sold at retail.

OSCAR'S SAUCE.

In the Bulletin of this Board for April, 1909, this sauce was advertised as being improperly labeled, in that the presence of benzoic acid as a preservative was not indicated. As now put upon the market, this preparation does not show the presence of benzoic acid.

PENNSYLVANIA'S NEW COCAINE LAW.

AN ACT REGULATING THE SALE, PRESCRIPTION, AND POSSESSION OF COCAINE, ITS SALTS, DERIVATIVES, OR COMPOUNDS; ALPHA OR BETA EUCAINE, THEIR SALTS, DERIVATIVES, OR COMPOUNDS; OR ANY SUBSTANCE OR PREPARATION CONTAINING COCAINE, ITS SALTS, DERIVATIVES, OR COMPOUNDS, OR ALPHA OR BETA EUCAINE, THEIR SALTS, DERIVATIVES, OR COMPOUNDS; AND PRESCRIBING PENALTIES FOR VIOLATION THEREOF.

SECTION 1. Be it enacted, &c., That no person shall sell, furnish, or give away cocaine, or its salts, derivatives or compounds; or alpha or beta eucaine, or their salts, derivatives or compounds; or any substance or preparation containing cocaine, its salts, derivatives, or compounds, or alpha or beta eucaine, their salts, derivatives, or compounds, except upon the prescription

of a duly registered, practicing physician, or of a dentist, or of a veterinarian, which prescription shall be filled but once, and of which no copy shall be taken by any one, and which shall be retained and kept on file by the dispenser thereof for a period of at least five years; nor shall any physician, dentist, or veterinarian prescribe, sell, or give away any cocaine, or its salts, derivatives, or compounds, or any alpha or beta eucaine or their salts, derivatives, or compounds, to any person known to such physician, dentist, or veterinarian to be an habitual user of those drugs.

Provided, That the provisions of this act shall not apply to persons engaged in the wholesale drug trade, regularly selling cocaine, its salts, derivatives, or compounds, or alpha or beta eucaine, their salts, derivatives, or compounds, to persons engaged in the retail drug trade, under the following conditions: That the wholesale dealer shall affix or cause to be affixed to the bottle, box, vessel, or package containing the article sold, and upon the outside wrapper of the package as originally put up, a label distinctly displaying the name and quantity of cocaine or its salts, alpha or beta eucaine, or their salts, sold, and the word "poison," with the name and place of business of the seller — all printed in red ink: And provided also, That the wholesale dealer shall, before delivering any of the articles, make or cause to be made, in a book kept for the purpose, an entry of the sale thereof, stating the date of sale, the quantity, name, and form in which sold, the name and address of the purchaser, and the name of the person by whom the entry is made, — and the said book shall be always open for inspection by the proper authorities, and shall be preserved for at least five years after the date of the last entry made therein: And provided also, That any manufacturer may sell to another manufacturer of the same article or to a wholesale dealer in drugs, or a wholesale dealer in drugs may sell to a manufacturer of the same article or to another wholesale dealer in drugs, alkaloid cocaine, or its salts, derivatives, or compounds, or alpha or beta eucaine, or their salts, derivatives, or compounds, or any substance or preparation containing cocaine, its salts, derivatives or compounds, alpha or beta eucaine, their salts, derivatives, or compounds, in their original package. Such package shall be labelled as herein provided, and shall be securely sealed. Each manufacturer and each wholesale dealer in drugs shall, before the delivery or at the time of the receipt, as the case may be, of any such drug, enter or cause to be entered in a book to be kept by them respectively for that purpose, a record of the purchase and sale of such drug, stating the date of purchase and the name and address of the person to whom sold, the quantity, name and form in which sold, and a description of the package or container in which sold, and how sealed, and there shall also be entered in such book, at the place of such record, a statement that such drug was sold or purchased, as the case may be, in the original package, that the seals thereon were undamaged and unbroken, and the labels were attached thereto as herein provided and were not in any manner defaced or damaged, which statement shall be signed by the person selling such drug, in the book herein required to be kept by him. Each manufacturer and

each wholesale dealer shall also file, as a part of this record, all orders for cocaine, its salts, derivatives, or compounds, or alpha or beta eucaine, their salts, derivatives, or compounds; or any substance or preparation containing its salts, derivatives, or compounds; alpha or beta eucaine, their salts, derivatives, or compounds, from other dealers.

And further, it shall be the duty of all wholesale dealers to make quarterly reports of their sales to other dealers, wholesalers or retailers, of cocaine or its salts, derivatives, or compounds, or any substance or preparation containing cocaine, its salts, derivatives or compounds, alpha or beta eucaine, their salts, derivatives, or compounds, to the State Pharmaceutical Examining Board, upon blanks to be provided for this purpose by the said Board.

SECTION 2. Any person violating any of the provisions of this act shall be sentenced to pay a fine of not more than five hundred dollars, and undergo an imprisonment of not more than two years, or both, or either, at the discretion of the court.

SECTION 3. That if any person — not being a practicing physician, dentist, or veterinarian, or manufacturer, or wholesale or retail dealer in drugs — shall have in his or her possession any cocaine, alpha or beta eucaine, or their salts, or any patent or proprietary remedies containing the same, except by reason of a prescription of a practicing physician, dentist, or veterinarian, he shall be guilty of a misdemeanor, and, upon conviction thereof, be sentenced to pay a fine of not more than one hundred dollars, and undergo an imprisonment of not more than six months, or both or either, at the discretion of the court.

SECTION 4. That the enforcement of this act shall be entrusted to the State Pharmaceutical Examining Board, appointed under the act of May twenty-fourth, one thousand eight hundred and eighty-seven, who shall appoint to carry out the provisions of this act an executive secretary, and shall also have power to employ such agents, chemists, and assistants as may be necessary for this purpose.

SECTION 5. That "An act regulating the sale or prescription of cocaine, or any patent or proprietary remedy containing cocaine, and prescribing penalties for the violation thereof," approved the twenty-second day of April, one thousand nine hundred and three (Pamphlet Laws), is hereby repealed.

SECTION 6. All acts or parts of acts inconsistent herewith be and the same are hereby repealed.

SECTION 7. Be it further enacted that this act shall be in force and effect at once. [*Approved the 8th day of May, A.D. 1909.*

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WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS OF MORE THAN 10,000 POPULATION.

WEEK ENDING JUNE 5, 1909.

CITIES AND TOWNS.	Population,[1] Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	178	45	50	22	15	3	–	–
Worcester,	136,476	34	11	4	1	1	–	1	–
Fall River,	106,486	35	13	15	8	2	–	–	–
Cambridge,	102,112	35	3	14	4	9	1	–	–
Lowell,	96,380	40	17	6	3	3	–	–	–
New Bedford,	85,516	25	13	9	2	3	–	–	–
Lynn,	84,623	17	5	6	–	2	1	2	–
Springfield,	84,237	27	4	9	3	4	1	–	–
Lawrence,	78,000	25	9	18	3	6	2	1	–
Somerville,	76,049	20	3	6	3	2	1	–	–
Brockton,	55,039	13	1	3	1	1	–	–	–
Holyoke,	53,590	20	8	11	2	1	–	–	1
Malden,	41,941	8	2	4	3	1	–	–	–
Chelsea,	40,080	7	1	–	–	–	–	–	–
Newton,	39,642	6	3	1	1	–	–	–	–
Salem,	39,019	9	–	2	–	2	–	–	–
Haverhill,	38,362	6	–	3	1	–	1	–	–
Fitchburg,	34,263	4	2	–	–	–	–	–	–
Everett,	33,597	11	–	4	1	2	1	–	–
Quincy,	31,937	3	–	1	–	1	–	–	–
Taunton,	30,967	12	–	5	2	2	–	–	–
Waltham,	28,761	6	0	1	–	1	–	–	–
Pittsfield,	27,932	9	2	1	1	–	–	–	–
Brookline,	26,674	8	–	2	–	–	–	1	–
Gloucester,	26,011	3	1	–	–	–	–	–	–
North Adams,	22,150	6	2	1	1	–	–	–	–
Northampton,	21,075	3	0	–	–	–	–	–	–
Chicopee,	21,049	7	5	–	–	–	–	–	–
Medford,	20,921	8	–	3	2	1	–	–	–
Beverly,	16,386	3	1	–	–	–	–	–	–
Leominster,	16,030	2	–	–	–	–	–	–	–
Hyde Park,	15,609	3	0	–	–	–	–	–	–
Melrose,	15,459	2	1	–	–	–	–	–	–
Newburyport,	14,834	4	1	1	–	–	–	–	–
Revere,	14,820	5	3	3	1	–	2	–	–
Westfield,	14,750	4	–	3	2	1	–	–	–
Woburn,	14,522	2	0	1	–	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	4	1	–	–	–	–	–	–
Attleborough,	13,913	5	3	–	–	–	–	–	–
Adams,	13,685	4	1	2	–	1	1	–	–
Clinton,	13,105	1	1	–	–	–	–	–	–
Gardner,	13,066	4	–	1	–	1	–	–	–
Milford,	12,722	4	0	1	–	–	–	–	–
Watertown,	12,676	2	1	1	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	0	–	–	–	–	–	–	–
Weymouth,	11,798	4	0	–	–	–	–	–	–
Framingham,	11,749	6	1	1	1	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	1	–	–	–	–	–	–	–
Greenfield,	10,140	6	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,379,468	651	164	193	68	62	14	5	1

[1] The populations were estimated upon the rate of growth from 1900 to 1905. Those of Taunton, Gloucester, North Adams and Clinton were allowed to stand as in 1905, having shown no increase during the five-year period. The gain in the population of Lowell is due to the annexation of a part of the town of Tewksbury. The population of Lawrence by the census of 1905 was 70,000, but, owing to the building of the new Wood and Arlington mills, an increase of about 8,000 is estimated by the Lawrence board of health, or 78,000.

WEEK ENDING JUNE 12, 1909.

CITIES AND TOWNS.	Estimated Population, 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	185	37	49	18	11	3	-	-
Worcester,	156,476	39	12	11	3	5	1	-	-
Fall River,	106,486	25	11	11	2	2	-	-	-
Cambridge,	102,112	29	5	5	3	2	-	-	-
Lowell,	96,380	26	11	10	5	5	-	-	-
New Bedford,	85,516	25	12	3	-	1	1	-	-
Lynn,	84,623	19	0	4	-	2	1	1	-
Springfield,	84,237	22	6	8	3	-	1	-	-
Lawrence,	78,000	17	6	9	2	3	-	-	1
Somerville,	76,049	20	5	7	3	2	-	-	-
Brockton,	55,039	10	4	5	2	1	-	-	1
Holyoke,	53,590	13	7	3	1	-	-	-	-
Malden,	41,941	7	-	1	-	-	-	-	-
Chelsea,	40,080	9	3	1	-	-	-	-	-
Newton,	39,642	11	3	3	1	2	-	-	-
Salem,	39,019	11	2	-	-	-	-	-	-
Haverhill,	38,362	12	2	1	-	1	-	-	-
Fitchburg,	34,263	1	1	1	1	-	-	-	-
Everett,	33,597	8	2	3	-	2	1	-	-
Quincy,	31,997	8	1	2	1	-	-	-	-
Taunton,	30,967	13	2	2	2	-	-	-	-
Waltham,	28,761	6	2	2	1	1	-	-	-
Pittsfield,	27,932	5	-	3	-	1	-	-	-
Brookline,	26,674	4	-	-	-	-	-	-	-
Gloucester,	26,011	6	2	-	-	-	-	-	-
North Adams,	22,150	7	2	1	-	1	-	-	-
Northampton,	21,075	6	1	2	-	1	1	-	-
Chicopee,	21,049	6	2	2	2	-	-	-	-
Medford,	20,921	3	-	-	-	-	-	-	-
Beverly,	16,386	3	-	1	-	1	-	-	-
Leominster,	16,030	7	-	3	2	1	-	-	-
Hyde Park,	15,609	2	2	-	-	-	-	-	-
Melrose,	15,459	5	1	-	-	-	-	-	-
Newburyport,	14,824	4	-	-	-	-	-	-	-
Revere,	14,820	4	-	-	-	-	-	-	-
Westfield,	14,750	7	-	1	-	1	-	-	-
Woburn,	14,522	5	1	1	1	-	-	-	-
Peabody,	14,512	-	-	-	-	-	-	-	-
Marlborough,	14,456	3	0	1	-	1	-	-	-
Attleborough,	13,913	2	0	-	-	-	-	-	-
Adams,	13,685	3	1	1	-	1	-	-	-
Clinton,	13,105	-	-	-	-	-	-	-	-
Gardner,	13,066	0	-	-	-	-	-	-	-
Milford,	12,722	2	0	-	-	-	-	-	-
Watertown,	12,676	5	1	2	1	1	-	-	-
Plymouth,	12,514	-	-	-	-	-	-	-	-
Southbridge,	11,848	3	-	1	-	1	-	-	-
Weymouth,	11,798	6	1	2	-	1	-	-	1
Framingham,	11,749	7	2	6	4	2	-	-	-
Wakefield,	11,124	-	-	-	-	-	-	-	-
Webster,	11,109	-	-	-	-	-	-	-	-
Arlington,	10,520	3	-	1	1	-	-	-	-
Greenfield,	10,140	5	-	1	-	1	-	-	-
Recapitulation.									
Total of reporting towns,	2,366,363	629	150	170	59	53	9	1	3

WEEK ENDING JUNE 19, 1909.

CITIES AND TOWNS.	Population. Estimated for 1908.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever	Measles.
Boston,	624,491	188	43	66	25	20	5	2	2
Worcester,	136,476	38	9	7	2	4	–	–	–
Fall River,	106,486	38	16	19	8	1	–	–	–
Cambridge,	102,112	32	11	18	2	8	1	–	1
Lowell,	96,380	29	9	11	5	3	1	1	–
New Bedford,	85,516	19	7	6	3	2	–	–	–
Lynn,	84,623	18	2	–	–	–	–	–	–
Springfield,	84,237	16	5	4	–	2	1	–	–
Lawrence,	78,000	21	11	8	–	2	1	–	2
Somerville,	76,049	20	4	4	1	1	2	–	–
Brockton,	55,039	16	3	3	–	2	–	–	–
Holyoke,	53,590	21	10	11	3	1	–	–	–
Malden,	41,941	8	1	2	–	1	–	–	–
Chelsea,	40,080	6	1	1	–	1	–	–	–
Newton,	39,642	7	1	2	1	1	–	–	–
Salem,	39,019	11	1	1	1	–	–	–	–
Haverhill,	38,362	12	2	1	–	1	–	–	–
Fitchburg,	34,263	13	3	3	3	–	–	–	–
Everett,	33,597	3	–	1	–	1	–	–	–
Quincy,	31,937	4	1	–	–	–	–	–	–
Taunton,	30,967	13	2	4	2	1	–	–	–
Waltham,	28,761	6	2	3	–	3	–	–	–
Pittsfield,	27,932	9	4	2	2	–	–	–	–
Brookline,	26,674	5	–	–	–	–	–	–	–
Gloucester,	26,011	4	1	–	–	–	–	–	–
North Adams,	22,150	7	3	1	–	1	–	–	–
Northampton,	21,075	7	0	–	–	–	–	–	–
Chicopee,	21,049	7	4	3	2	1	–	–	–
Medford,	20,921	6	–	4	2	2	–	–	–
Beverly,	16,386	4	–	3	1	2	–	–	–
Leominster,	16,030	5	–	2	1	–	–	–	–
Hyde Park,	15,609	3	–	2	–	1	–	–	–
Melrose,	15,459	5	2	2	–	1	–	–	–
Newburyport,	14,834	2	–	1	1	–	–	–	–
Revere,	14,820	5	–	–	–	–	–	–	–
Westfield,	14,750	3	–	–	–	–	–	–	–
Woburn,	14,522	4	0	–	–	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	4	1	–	–	–	–	–	–
Attleborough,	13,913	2	1	–	–	–	–	–	–
Adams,	13,685	3	0	–	–	–	–	–	–
Clinton,	13,105	2	0	–	–	–	–	–	–
Gardner,	13,066	5	–	1	1	–	–	–	–
Milford,	12,722	6	3	1	–	–	–	–	–
Watertown,	12,676	0	–	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	3	1	2	2	–	–	–	–
Weymouth,	11,798	3	0	3	1	1	–	–	–
Framingham,	11,749	3	–	–	–	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	2	–	1	–	1	–	–	–
Greenfield,	10,140	2	–	–	–	–	–	–	–

Recapitulation.

Total of reporting towns,	2,379,468	650	164	203	69	65	11	3	5

WEEK ENDING JUNE 26, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM—					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	190	47	44	14	14	2	1	1
Worcester,	136,476	51	11	10	1	–	1	–	–
Fall River,	106,486	43	25	17	2	4	–	–	–
Cambridge,	102,112	36	6	11	3	6	–	–	–
Lowell,	96,380	34	7	10	3	4	1	1	–
New Bedford,	85,516	33	13	10	5	3	–	–	–
Lynn,	84,623	25	4	2	–	1	–	–	–
Springfield,	84,237	35	10	5	1	–	–	–	1
Lawrence,	78,000	18	8	7	2	1	–	–	1
Somerville,	76,049	16	4	7	3	3	–	–	1
Brockton,	55,039	10	2	3	–	1	–	–	–
Holyoke,	53,590	21	13	8	2	1	–	–	–
Malden,	41,941	13	2	3	1	1	–	1	–
Chelsea,	40,080	11	4	1	–	1	–	–	–
Newton,	39,642	10	1	1	1	–	–	–	–
Salem,	39,019	19	3	3	–	1	–	–	–
Haverhill,	38,362	11	2	2	–	–	–	–	–
Fitchburg,	34,263	6	2	–	–	–	–	–	–
Everett,	33,597	11	2	1	–	–	–	–	1
Quincy,	31,937	8	–	4	2	1	–	1	–
Taunton,	30,967	8	1	3	3	–	–	–	–
Waltham,	28,761	10	–	3	1	2	–	–	–
Pittsfield,	27,932	12	1	2	2	–	–	–	–
Brookline,	26,674	4	–	–	–	–	–	–	–
Gloucester,	26,011	5	1	–	–	–	–	–	–
North Adams,	22,150	7	–	2	–	1	–	1	–
Northampton,	21,075	9	3	2	–	–	–	–	–
Chicopee,	21,049	11	3	4	1	1	–	–	–
Medford,	20,921	5	1	1	1	–	–	–	–
Beverly,	16,386	5	1	1	–	–	–	–	–
Leominster,	16,030	8	2	2	–	1	–	–	–
Hyde Park,	15,609	1	1	–	–	–	–	–	–
Melrose,	15,459	3	2	–	–	–	–	–	–
Newburyport,	14,834	7	–	1	–	–	–	1	–
Revere,	14,820	5	2	2	1	–	–	–	–
Westfield,	14,750	2	–	–	–	–	–	–	–
Woburn,	14,522	3	1	1	–	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	3	0	1	1	–	–	–	–
Attleborough,	13,913	3	2	–	–	–	–	–	–
Adams,	13,685	2	1	1	–	1	–	–	–
Clinton,	13,105	3	–	–	–	–	–	–	–
Gardner,	13,066	4	1	1	–	1	–	–	–
Milford,	12,722	2	0	–	–	–	–	–	–
Watertown,	12,676	2	0	1	1	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	2	1	–	–	–	–	–	–
Weymouth,	11,798	2	0	2	–	–	–	1	–
Framingham,	11,749	3	2	2	2	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	3	–	–	–	–	–	–	–
Greenfield,	10,140	–	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,379,468	735	192	181	53	49	4	7	5

WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.

DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF JUNE 5, 12, 19 AND 26, 1909.

DISEASE.	Place.	Week ending—			
		June 5.	June 12.	June 19.	June 26.
Cerebro-spinal meningitis,	Boston,	–	2	–	–
	Holyoke,	1	–	–	–
	Leominster,	–	–	–	1
	New Bedford,	–	–	–	1
	Northampton,	–	–	–	1
	Worcester,	–	2	1	4
Scarlet fever,	Boston,	1	2	–	1
	Cambridge,	–	–	1	–
	Chelsea,	–	1	–	–
	Fall River,	–	–	1	–
	Lowell,	–	–	–	1
	Melrose,	–	–	1	–
	Somerville,	–	1	–	–
	Springfield,	1	4	–	–
	Taunton,	–	–	1	–
	Worcester,	1	–	–	1
Whooping cough,	Boston,	2	1	–	1
	Beverly,	–	–	–	1
	Fall River,	–	1	1	–
	Lawrence,	–	–	–	1
	Milford,	1	–	1	–
	New Bedford,	1	–	–	–
	Revere,	–	–	–	1
	Springfield,	–	–	–	1
	Watertown,	1	–	–	–
Erysipelas,	Boston,	1	–	–	1
	Cambridge,	–	–	1	–
	Chicopee,	–	–	–	1
	Holyoke,	1	–	–	–
	Lawrence,	1	–	–	–
	Worcester,	–	–	–	1
Tuberculosis other than pulmonary.	Boston,	3	4	6	4
	Brockton,	–	1	–	–
	Brookline,	1	–	–	–
	Cambridge,	–	–	1	–
	Fall River,	2	2	–	–
	Haverhill,	1	–	–	1
	Holyoke,	1	–	2	1
	Lawrence,	2	3	–	1
	Leominster,	–	–	1	–

DISEASE.	Place.	Week ending — June 5.	June 12.	June 19.	June 26.
Tuberculosis other than pulmonary — *Con.*	Lynn,	–	–	–	1
	Pittsfield,	–	2	–	–
	Salem,	–	–	–	1
	Quincy,	–	1	–	–
	Weymouth,	–	–	1	1
	Woburn,	1	–	–	1
Tubercular meningitis,	Malden,	–	–	1	–
	Hyde Park,	–	–	1	–
Influenza,	Boston,	1	1	–	–
	Brockton,	–	–	–	1

WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

Cases of Infectious Diseases reported during the Weeks of June 5, 12, 19 and 26, 1909.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending — June 5.	June 12.	June 19.	June 26.
Diphtheria,	125	133	115	107
Measles,	483	533	472	563
Scarlet fever,	134	152	127	129
Typhoid fever,	40	29	37	33
Tuberculosis, pulmonary,	132	142	137	139
Cerebro-spinal meningitis,	1	3	–	2
Whooping cough,	29	15	20	20
Varicella,	36	45	32	44
Erysipelas,	1	–	–	–
Mumps,	2	3	–	–
Ophthalmia neonatorum,	–	–	2	1
Tuberculosis other than pulmonary,	1	5	1	1
Smallpox,	–	–	–	–
Leprosy,	–	–	–	–
Trichinosis,	–	–	1	–
Tuberculosis meningitis,				

MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of June, 1909: —

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Butter,	4	–	4	Meat extracts: —			
Cheese,	1	–	1	Pickled lambs tongues,	1	–	1
Cider,	3	–	3	Pressed meat,	1	–	1
Cocoa,	4	–	4	Sausages,	5	1	6
Cream,	8	–	8	Milk,	332	123	455
Cream of tartar,	1	–	1	Nonalcoholic drinks,	5	–	5
Drugs,	83	6	89	Olive oil,	13	5	18
Flavoring extracts: —				Pickles,	2	–	2
Lemon,	2	–	2	Proprietary foods,	1	–	1
Vanilla,	2	–	2	Sardine paste,	2	–	2
Grape juice,	3	–	3	Shrimp paste,	1	–	1
Honey,	10	–	10	Spices,	15	–	15
Horse-radish,	1	–	1	Table sauces,	6	–	6
Ice cream,	2	–	2	Vinegar,	2	–	2
Jams, jellies and preserves,	14	–	14				
Maple syrup,	2	–	2	Total,	516	135	651

The samples of drugs found to be adulterated were: camphor liniment syrup, essence of peppermint and tincture of iodine.

The cities and towns in which samples were collected were: Ayer, Baldwinville, Braintree, Boston, Burlington, Cambridge, Danvers, Hudson, Hull, Hyde Park, Ipswich, Lawrence, Littleton, Lowell, Lynn, Lynnfield, Malden, Marblehead, Mansfield, Medford, Methuen, Milford, Millis, Peabody, Quincy, Revere, Salem, Somerville, Wakefield, Waltham, Warren, Watertown, Westborough, Winchendon, Winchester, Winthrop and Woburn.

PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING TO FOOD AND DRUGS.

Ten convictions were secured during the month of June, 1909, for selling adulterated food and drugs, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	Antonio Cardinali,	Boston,	Olive oil (25 per cent. cotton-seed oil).
2	Antonio Cardinali,	Boston,	Olive oil (25 per cent. cotton-seed oil).
3	Antonio Cardinali,	Boston,	Olive oil (40 per cent. cotton-seed oil).
4	Eugene B. Carpenter,	Somerville,	Olive oil (60 per cent. cotton-seed oil).
5	Daniel E. Cummings,	Peabody,	Milk (35 per cent. added water).
6	John King,	Braintree,	Milk (total solids, 11.40).
7	John King,	Braintree,	Milk (total solids, 11.80).
8	Herbert Leed,	Lawrence,	Sausage (tomato).
9	William Kingsley,	Lawrence,	Sausage (tomato).
10	Joseph Laurin,	Lowell,	Vinegar.

Fines imposed, $271.50.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
9784	"Black Diamond" Borax.	Archibald & Lewis, 193 Front Street, New York,	Improperly labeled; percentage of ingredients not stated on main label.
9913	Tincture of iodine,	Millis Pharmacy, E. P. Jones, proprietor, Millis, Mass.,	36 per cent. United States Pharmacopœia strength.
1330 N	Milk,	Joe Silverman, Revere, Mass,	Total solids, 11.72 per cent.; fat, 2.95 per cent.; proteid, 3.28 per cent.; skimmed milk.
9000	Milk,	– –	Total solids, 11 per cent.; fat, 2.20 per cent.; proteid, 3 28 per cent.; skimmed milk.
243 R	Milk,	Eliot M. Whitcomb, Winchendon, Mass.,	Total solids, 10.28 per cent.; fat, 2 per cent.; proteid, 3.05 per cent.; skimmed milk.
9929	Milk,	– –	Total solids, 11.30 per cent.; fat, 2.70 per cent.; proteid, 3.34 per cent ; skimmed milk.
9936	Milk,	– –	Total solids, 11.52 per cent.; fat, 2.60 per cent.; proteid, 3 per cent.; skimmed milk.
289 R	Milk,	Robert Welch, Winchendon, Mass.,	Total solids, 11.64 per cent.; fat, 3.05 per cent.; proteid, 3.34 per cent.; skimmed milk.
291 R			Total solids, 10.34 per cent.; fat, 2.25 per cent.; proteid, 3.04 per cent.; skimmed milk.
297 R	Milk,	Eliot M Whitcomb, Winchendon, Mass.,	Total solids, 11.32 per cent.; fat, 2.80 per cent ; proteid, 3.42 per cent.; skimmed milk.
q 3286	Milk,	Frank E. Chandler, South Street, Medford, Mass.,	Total solids, 11.44 per cent.; fat, 2.85 per cent.; proteid, 3.27 per cent.; skimmed milk.
q 3309	Milk,	Charles T. Weatherbee, Boxborough, Mass.,	Total solids, 11.34 per cent.; fat, 2.40 per cent.; proteid, 3.43 per cent.; skimmed milk.
q 3310			Total solids, 11.14 per cent.; fat, 2.10 per cent.; proteid, 3.61 per cent.; skimmed milk.
1322 N	Milk,	George P. Beckett, care of H. P. Hood & Sons, Chelsea, Mass.	Total solids, 11.20 per cent.; contained added water.
103 R	Milk,	Albert L. Forbush, Braintree, Mass.,	Total solids, 10.36 per cent.; contained added water
105 R			Total solids, 11.22 per cent.; contained added water.
107 R			Total solids, 11.63 per cent.; contained added water.

LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC. — *Concluded.*

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
127 R	Milk, ...	Daniel E. Cummings, Peabody, Mass., ...	Total solids, 10.10 per cent.; contained added water.
129 R			Total solids, 10.05 per cent.; contained added water.
131 R			Total solids, 9.24 per cent ; contained added water.
133 R			Total solids, 9.53 per cent.; contained added water.
135 R			Total solids, 10.00 per cent.; contained added water
137 R			Total solids, 9.50 per cent.; contained added water.
139 R			Total solids, 11.10 per cent.; contained added water.
141 R			Total solids, 9.56 per cent.; contained added water.
143 R			Total solids, 10.08 per cent.; contained added water.
145 R			Total solids, 10.06 per cent.; contained added water.
147 R			Total solids, 8.24 per cent.; contained added water.
q 3297	Milk, ...	Frank T. Moore, West Peabody, Mass , ...	Total solids, 11.04 per cent.; contained added water.
q 3308	Milk, ...	Charles T. Weatherbee, Boxborough, Mass., . . .	Total solids, 11.03 per cent.; contained a boron preservative.

INSPECTION OF DAIRIES.

During the month of June, 1909, 208 dairies were examined in the following places: —

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number to which Letters were sent.	Per Cent.
Acton,	–	–	–	–	–
Third inspection,	2	–	–	2	100.00
Andover,	4	1	25.00	3	75.00
Belchertown,	5	2	40.00	3	60.00
Second inspection,	7	5	71.43	2	28.57
Chicopee,	1	1	100.00	–	–
Second inspection,	4	1	25.00	3	75.00
Third inspection,	1	1	100 00	–	–
Clinton,	2	2	100.00	–	–
Second inspection,	4	3	75.00	1	25.00
Framingham,	21	18	85.71	3	14.29
Second inspection,	27	24	88.89	3	11.11
Granby,	4	1	25.00	3	75 00
Second inspection,	54	23	42.59	31	57.41
Third inspection,	2	2	100.00	–	–
Hamilton,	–	–	–	–	–
Second inspection,	1	–	–	1	100.00
Holyoke,	–	–	–	–	–
Second inspection,	1	1	100.00	–	–
Ipswich,	5	4	80.00	1	20.00
Second inspection,	35	14	40.00	21	60.00
Ludlow,	–	–	–	–	–
Second inspection,	3	–	–	3	100.00
Malden,	1	–	–	1	100.00
Second inspection,	6	1	16.67	5	83.33
Fourth inspection,	8	1	12.50	7	87.50
Melrose,	–	–	–	–	–
Fourth inspection,	2	1	50.00	1	50.00
Saugus,	–	–	–	–	–
Fifth inspection,	1	–	–	1	100.00
South Hadley,	1	–	–	1	100.00
Westfield,	1	1	100.00	–	–
Second inspection,	5	1	20.00	4	80.00

Total number of dairies examined,	208
Number found to be free from objectionable conditions,	108
Number to which letters were sent,	100
Total number of conditions to which attention was called,	261
Percentage of dairies which passed inspection,	51.92

Andover.

Livingston, Charles W.

Belchertown.

Belchertown Town Farm *†
Clough, William *†
Couture, E
Couture, O. M.
Lambson, H. M.
McKillop, H. E.
Underwood, A. C.

* Second inspection. † Reported favorably on first inspection.

Chicopee.

Beauchard, John *
Chriton, Emil
Paul, C. A. & Son ‡

Clinton.

Clougherty, M.
Gorman, John
Harris, Estate of Mrs. A. K.*†
Kanis, Herman *†
Sawyer, Estate of Eli *†

Framingham.

Atwell, Thomas *
Barteaux, J. A.*
Barton, C. C.*†
Belches, D. M.
Benjamin, B.
Bowditch, D. I.*†
Bowditch, N. I.*†
Bowlker, T. J.*†
Bradford, Robert
Capen, E. A.
Cutting, Charles
Cutting, John
Eaton, Charles F.
Ellis, Moses
Esterbrook, E. L.*†
Forester, G. C.*
Forster, William P.
Framingham Town Farm
Hewett, M. E.*
Hosmer, W. S.
Jackson, Mrs Mary A.
Kenton, L. B.*†
Kessel, R.*†
Klous, H. D.*†
Loker, W. W.
Long, R. H.*
May, Edward P.
Merriam, J. A.*
Monahan, Michael
Mullen, John *
Noyes, Charles L.*
Parker, Peter *
Parsons, C. P.*†
Paul, Frank E.
Perkins, R. F.
Sampson, Thomas *
Sanderson, G. O.*
Shilliedy, T.*
Stenson, A. O.*†
Walsh, William H.
Warren, E. R.*†
Winch, Bert *

Granby.

Barnes, Dexter R.*
Batchelder, William *
Beaudoin, O.‡
Benson, W. S.*
Bray, J. A.*
Crevier, Rev. Charles *
Dupree, J.*
Ferry, Clifford W.*
French, R. A.
Goldthwait, H. A.*
Guiel Bros.*
Kane Bros.*†
Kellogg, Nelson S.*
McGrath, M. F.*
Moody, Harry G.*
Moody, Henry H.*
Mungon, B., Jr.*
Nutting, Dwight S.*
Nutting, George *
Prentiss, R. T.*†
Randall, C. H.*
Taylor, Charles N.*
Taylor, Horace S.*†
Taylor, Leon W.*
Tucker, Oscar *†
Warner, Arthur ‡

Holyoke.

Griffin, John P.*

Ipswich.

Appleton, F. R.*†
Brown, E. N.*
Brown, Storey *
Burnham, F. H.
Chapman, E. I.*
Goodhue, William *
Howe, Elmer
Ipswich House of Correction *†
Ipswich Town Farm *†
Jewett, Charles *
Jewett, N. M.
Kimball, Daniel *†
Kinsman, W. F.*†
Perley, D. S.*†
Underhill, A. R *
Warner, William F.*
Whipple, George A.*
Wile, Edward

Malden.

Weinstein, David *†
Weitzman, E.§

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* Second inspection.
† Reported favorably on first inspection.
‡ Third inspection.
§ Fourth inspection.

Melrose.

McDonald, Angus §

Westfield.

Higgins, N. H.* Talmadge, W. H.

PROPRIETARY PREPARATION ADVERTISED AS UNSALABLE IN JUNE, 1909.

Shaw's Malt. Bernheim Distilling Company, Louisville, Ky. (No statement of the percentage of alcohol.)

THE DIFFERENTIATION OF OUTBREAKS OF TYPHOID FEVER DUE TO WATER, MILK, FLIES AND CONTACT.[1]

By John F. Anderson, Passed Assistant Surgeon and Assistant Director Hygienic Laboratory United States Public Health and Marine Hospital Service, Washington, D. C.

Gentlemen: — When I received the invitation from our honorable president, Dr. Lewis, to read a paper before this association on the differentiation of typhoid fever outbreaks due to infected water, milk, etc., I fully realized my limitations in dealing with the subject. However, I thought that a few observations I had made while investigating in my official capacity several epidemics of typhoid fever might be of some interest and perhaps profit to you.

It is a serious reflection upon the people of the United States that, according to the census report for 1900, there were 35,379 deaths in the United States that year from typhoid fever, — a preventable disease. This loss of life, according to Whipple's calculation, represented money loss to the community of $212,000,000 for that year alone.

The average typhoid death-rate in cities of the United States is about 35 per 100,000. Whipple states that in the cities about 40 per cent. of the typhoid fever is due to water, 25 per cent. to milk, 30 per cent. to contagion — including fly transmission — and only about 5 per cent. to all

* Second inspection. § Fourth inspection.

[1] Read before the American Public Health Association at Winnipeg, August, 1908. Reprinted from the American Journal of Public Hygiene, May, 1909.

other causes. The Board of Officers of the Public Health and Marine Hospital Service, investigating typhoid fever in the District of Columbia, found in 1906 that of the cases studied by them about 11 per cent. were indefinitely attributed to milk infection, about 7 per cent. to infection by contact: in 1907 they definitely attributed about 9 per cent. to milk and about 19 per cent. to contact.

In the study of an outbreak of typhoid fever it is of vital importance, first of all, to determine whether the disease is really typhoid fever. For this purpose, in addition to the usual bedside methods, two other procedures may and should be employed in all doubtful cases. I refer to the Widal reaction and to blood cultures. The blood culture is of more value than the Widal test, in that cultures can be obtained in the first days of the disease. For the examination of the blood we have found the bile enrichment method, followed by plating on Endo medium, the most satisfactory. By this method, cultures taken in the first week of the disease will give positive results in 90 to 100 per cent. of the cases.

Having determined that the disease prevailing with undue frequency is typhoid fever, it is necessary that each case be studied in detail from an epidemiological standpoint. In places which require the reporting of typhoid fever, the study is much easier than in those where it is not done. The essential data can only be obtained by competent persons visiting the patients and obtaining all possible information from the patient, nurse and family, and by an inspection of the premises.

It is well to have a map of the city, and as the data for each case are collected to indicate the location on the map by sticking in a large pin. A glance at this will readily show if the cases are confined to any particular locality.

All data collected should be at once tabulated and carefully studied as to the bearing of the various probable sources of infection.

I shall now take up in detail the special characteristics of outbreaks of typhoid fever due to infected water and milk, and to transmission by flies, etc.

Characteristics of Outbreaks due to Water.

The striking characteristics of outbreaks of typhoid fever due to water are: —

1. General Distribution of Cases throughout the Area supplied by a Particular Water. — The incidence of cases is independent of social conditions, occupation and age, except that very young children as a rule are not affected in equal proportion to other ages, due, perhaps, to the difference in susceptibility and to taking less water.

2. Explosive Onset of the Outbreaks. — When the water supply, previously good, becomes suddenly infected, as in the case of Plymouth or

Butler, Pa., the outbreak begins with great suddenness and violence. There is a sudden and great increase in the number of cases reported. This increase may continue until the sources of infection of the water are removed or the water supply changed. If the former be the case there is a more gradual decline in the number of cases than when the supply is suddenly replaced by a pure one, in which case the decrease is sudden and marked. Secondary cases from contacts may keep the number above normal for a time.

When there is a continuance of the source of the infection, as in the case of the Lowell and Lawrence outbreaks of 1890 and 189?, the onset is not usually so explosive in character and the decline is more gradual. In Pittsburg, where there is a continual infection of the water supply, the disease is more prevalent in the fall and winter, which may be due in part to other causes than water.

When a water supply, such as a river, is subject to continual infection, the increase in the number of cases in late summer and fall may be attributed to the fact that, as the number of cases increase which supply infection for the stream, the amount of infection is correspondingly increased.

3. Seasonal Prevalence; Spring or Late Winter. — Outbreaks of typhoid due to infection of a water supply previously good usually occur in the late winter or spring. This is due, as in the case of the Plymouth and New Haven epidemics, to the fact that infected discharges are thrown on the frozen ground and when thaws or floods come the infection is suddenly washed into the stream.

When a supply becomes infected by the failure of the purification methods used, or by a change in the source, the outbreak is, of course, independent of season.

4. Comparative Freedom from the Disease of Persons not using the Suspected Water. — When there is more than one water supply, or where persons use pure bottled water or boil the water, the comparative freedom of such persons from the disease is striking. This was well shown in the Butler epidemic, where a large part of the first ward of the city received their water from deep driven wells; in this ward, with an equal population to the other four wards, there were only about one-half as many cases.

5. Inspection of the Water-shed shows Evident Sources of Infection. — An inspection of the water-shed may show that it is being continuously infected by discharges of typhoid fever cases. In some cases, as at Butler and other places, the discharges may actually have been allowed to go directly into the stream from privies overhanging it.

6. The Outbreaks may have begun or ended, following a Change of the Water Supply. — When a previously good water is replaced for any

good reason by an unknown water, or a suspected water is replaced by one of undoubted purity, the consequent beginning or discontinuance, as the case may be, of an outbreak of typhoid would properly be laid to water.

7. Bacteriological and Chemical Examination reveals Evidences of Pollution. — While it is practically hopeless to expect to find the typhoid bacillus in water, still the finding of *B. coli* in small amounts of water and chemical evidences of pollution are additional evidence against the water.

8. Exclusion of All Other Probable Causes. — This means the exclusion of milk, food, contact, fly transmission, and other possible sources of infection.

Characteristics of Outbreaks due to Milk.

On investigating an outbreak of typhoid fever, the following points would indicate very strongly that the infection was being introduced through the milk: —

1. Sudden Outbreak of an Unusual Number of Cases followed by a Rapid Decline. — The outbreak is frequently sudden in its onset, a large number of cases occurring on a certain milk route within a few days. If the infection be introduced only once, as by flies, there is a sudden rise, followed by a sudden decline in the number of cases. If there is a continuance of the infection, as from a bacillus carrier, the onset may be more gradual and the decline will be delayed.

In dairies which do not practice sterilization of bottles, the milk may become infected through bottles delivered at houses where there are cases of typhoid fever; these infected bottles are returned to the dairy, refilled and delivered to other customers. Where the milk becomes infected by washing the cans with infected water, as in the Palo Alto outbreak, the number of cases is usually much greater than when infected in other ways. After the usual incubation period secondary cases from contacts begin to appear.

2. The Appearance of an Unusual Number of Cases among Customers of a Certain Dairy. — The appearance of an unusual number of cases without a general increase elsewhere on the route of a dairy should at once direct especial attention to the milk. Of course, typhoid fever due to infection from other sources may occur among persons supplied by a particular dairy, but they will not be found to be chiefly consumers of the milk. It is often very striking how the consumers of a dairy whose milk is infected may be picked out by the unusual proportion of cases on that milk route. Very frequently cases may be traced in persons not directly supplied by the suspected dairy, but who have taken this milk

at the home of some friend or at a restaurant. An increase in the number of cases on a certain route, associated with a decrease generally throughout the city, is particularly suggestive of milk infection.

3. Unusual Incidence of Cases among Users of Milk. — It will be found that there is unusual prevalence of typhoid fever among the users of milk; the non-consumers escape or develop as secondary cases. As women and children generally use more milk than men, an unusual prevalence of the disease among them is a common feature of milk-borne outbreaks. Those families on the suspected route who make a practice of pasteurizing their milk escape, except from infection as secondary cases.

4. More Cases among the Well-to-do than among the Poor. — *In a* milk outbreak there are usually more cases among the well-off, due to the fact that they are more able to buy milk and use it in larger quantities than the poor, while in fly-borne outbreaks the poor and those living under insanitary conditions are more often attacked.

5. The Finding of the Typhoid Bacillus in the Suspected Milk. — This is practically hopeless, as the milk rarely comes under suspicion for at least three weeks after having become infected. In addition, the technical difficulties are so great that it is an almost hopeless procedure, though the isolation of the organism should be attempted. If successful, it is absolutely conclusive.

Characteristics of Outbreaks due to Contagion and Transmission by Flies.

It is impossible to state definitely the characteristics of outbreaks of typhoid fever due to transmission by flies and to contacts, as in the case of milk and water outbreaks. A final conclusion in regard to the source of the infection can only be reached by a consideration of all the factors involved.

For purposes of convenience I shall discuss the characteristics of outbreaks of typhoid fever due to contagion and transmission by flies at the same time. The great part played by flies in the transmission of typhoid fever was first emphasized in the masterly "Report of the Origin and Spread of Typhoid Fever in United States Military Camps during the Spanish War," by Reed, Vaughan and Shakespeare. They concluded that "flies were undoubtedly the most active agents in the spread of typhoid fever. Flies alternately visited and fed on the infected fecal matter and the food in the mess tents. More than once it happened, when lime had been scattered over the fecal matter in the pits, that flies, with their feet covered wih lime, were seen walking over the food. Typhoid fever was much less frequent among members of messes who had their mess tents screened than it was among those who took no such precaution. Typhoid

fever gradually died out, in the fall of 1898, in the camps at Knoxville and Mead, with the disappearance of the fly, and this occurred at a time of year when in civil practice typhoid fever is generally on the increase. The first pits at Knoxville contained, before the first twenty-four hours had passed after the arrival of the troops, fecal matter infected with the typhoid bacillus. Flies swarmed everywhere. Instead of abating, the disease increased. The soldiers were using the same water used exclusively by the inhabitants of West Knoxville, and among the latter there was not at that time a case of typhoid fever. Certainly the disease was not disseminated through the drinking water.[1]

Alice Hamilton[1] investigated in 1902 an outbreak of fever in the nineteenth ward of the city of Chicago. This ward, which only contained about one-thirty-sixth of the total population of the city, had between one-sixth and one-seventh of all the deaths from typhoid fever. It seemed to her that, while the water was undoubtedly the causative factor in the epidemic throughout the city, there must be some local cause for its undue prevalence in the nineteenth ward. The sanitary arrangements in this ward were found to be very bad, and on those streets with the worst sanitary arrangements there were the largest number of deaths from typhoid fever, irrespective of the poverty of the inhabitants.

Flies caught in two undrained privies, on the fences of two yards, on the walls of two houses and in the room of a typhoid patient were used to inoculate eighteen tubes; from five of these tubes the typhoid bacillus was isolated. In this outbreak the chain of evidence implicating the fly in the spread of the disease was certainly convincing and almost complete.

The outbreak in the city of Winnipeg, in August, 1904, investigated by Dr. E. O. Jordan, which was confined almost entirely to the poorer part of the city, was attributed to transmission by flies and contacts.

Outbreaks due to direct contact are seen especially in institutions where there are typhoid fever cases and in houses where the family and friends visit and assist in the care of the patient. In these cases the infection is conveyed either directly by the future patient, or indirectly by the nurse, to food consumed by others.

Typhoid carriers, such as the one reported by Soper in the person of a cook, who was responsible for at least 28 cases of typhoid fever in families in whose employ she had been, are instances in which the infection is conveyed by a third person.

The bacilli have been found in practically all of the excretions of typhoid fever cases, and it is only by the most scrupulous care on the part of the attendant that infection can be avoided for himself and others. The Board of Officers of the Public Health and Marine Hospital Serv-

[1] Journal American Medical Association, Vol. 40, 1902, p. 576.

ice, studying typhoid fever in the District of Columbia, attributed about 7 per cent. of the cases in 1906 and about 19 per cent. in 1907 to contact infection from other cases.

The chief characteristics, then, of outbreaks of typhoid fever due to transmission by flies and by contact are their local character, their appearance in places where the sanitary conditions are poor or where they are neglected, occurring during the fly season in the case of fly transmission and among those most closely associated with the patient.

THE TYPHOID TOURNIQUET.[1]

If the simplest epidemiological information could be substituted for the so prevalent old wives' fables relating to wells and water, typhoid fever could be cut in half merely because then the physician and the health officer would begin to act without waiting for water analyses, or even for a list of the typhoid cases. The first duty of the health officer who knows that typhoid exists in a community is not to make an investigation, but to face the actual status, to treat the emergency symptoms without waiting for the discovery of the ultimate cause. If a man is spurting blood from a wounded thigh, the surgeon does not wait to determine the exact nature and extent of the lesion, nor even the exact vessel concerned, — he throws a tourniquet around the whole limb to stop the flow, and then at leisure he investigates, finds the vessel or vessels concerned, and ties it or them in a systematic fashion, according to approved surgical canons. Exactly parallel is the condition of a community suffering from typhoid. Instead of laboriously searching for the particular source — a search which may take weeks, years, or even, as in Washington, D. C., a decade — the proper course is to stop the existing epidemic. To do this requires an immensely vigorous publicity campaign, but it can be done. In Minnesota our first gun is fired — not at the water supply, for we cannot know at first that the water is infected; not at the milk supply, for we cannot know at first that the milk is infected; not at the raw food, or flies, we cannot know at first that these are responsible; not at fingers, even, although it is always safe to assume that fingers are a factor in every outbreak. We cannot attack any one of these, when first called in, because at that time we do not know which is the cause. We attack every one at once, as the surgeon in the parable ligatures the whole limb. Later we pick out at leisure the particular source and cut that off.

[1] Extract from a paper by H. W. Hill, M.D., entitled "The Epidemiological Diagnosis and Treatment of Typhoid Outbreaks." American Journal of Public Hygiene, May, 1909.

The method is very simple. On finding a typhoid outbreak in a town, we issue in the papers, display on the streets and address to every householder the following placard: —

To the Citizens of ——.

Typhoid Fever is Epidemic in ——.

The Minnesota State Board of Health is investigating this epidemic to find its exact source. Meantime govern yourselves as follows: —

1. *Typhoid fever* is contracted solely by the mouth. If you do not put the poison of typhoid fever into your mouth *you will never contract typhoid fever.* Therefore, *watch the mouth.*

2. *Do not eat or drink anything* (water, milk, oysters, fresh vegetables or anything else) *unless* it has been first *boiled, broiled, baked, roasted, fried* or otherwise *thoroughly heated* through and through.

3. *Do without all food or drink* which has not first been thus heated. (Canned or bottled foods or drinks (other than milk or water) are not included in this.)

4. If living in the same house with a typhoid fever patient, *do not handle your own food,* or food intended for any one else, even if it has been heated, except with *hands* that have been *thoroughly washed* with soap and very hot water. (Preferably also with antiseptic; ask your physician about the antiseptic to use.) *Wash before every meal* in this way, and before cooking, serving or eating *anything, or putting the fingers in the mouth.*

5. If there are flies about, see that all food and drink is protected from them at all times. Flies often carry typhoid poison to foods and drinks.

6. *The poison of typhoid fever* does not show itself for *two weeks* after it enters the body. Therefore, for the next two weeks typhoid cases may develop from typhoid poison already taken in. But any case which develops on and after (a date two weeks later than the date of the placard) will be due *solely to neglect* of this notice and failure to carry out minutely the directions here given.

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WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS OF MORE THAN 10,000 POPULATION.

WEEK ENDING JULY 3, 1909.

CITIES AND TOWNS.	Population.[1] Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	170	41	47	11	16	3	–	1
Worcester,	136,476	42	17	10	4	2	–	–	–
Fall River,	106,486	43	23	19	2	3	–	–	–
Cambridge,	102,112	18	2	6	2	4	–	–	–
Lowell,	96,380	32	12	10	3	3	–	–	1
New Bedford,	85,516	25	14	7	2	–	–	–	–
Lynn,	84,623	16	2	4	–	4	–	–	–
Springfield,	84,237	20	10	6	1	–	–	–	–
Lawrence,	78,000	23	9	11	2	4	–	–	–
Somerville,	76,049	18	3	4	–	2	–	–	–
Brockton,	55,039	7	2	3	1	1	–	–	–
Holyoke,	53,590	15	6	3	–	–	–	–	–
Malden,	41,941	5	–	–	–	–	–	–	–
Chelsea,	40,080	9	2	1	–	–	–	–	–
Newton,	39,642	7	1	3	1	1	–	–	–
Salem,	39,019	–	–	–	–	–	–	–	–
Haverhill,	38,362	14	4	5	2	1	–	–	–
Fitchburg,	34,263	6	2	–	–	–	–	–	–
Everett,	33,597	2	–	–	–	–	–	–	–
Quincy,	31,937	8	4	1	–	1	–	–	–
Taunton,	30,967	14	2	4	1	1	–	–	–
Waltham,	28,761	7	2	3	2	–	–	–	–
Pittsfield,	27,932	4	1	1	–	1	–	–	–
Brookline,	26,674	2	–	1	–	–	–	–	–
Gloucester,	26,011	3	–	–	–	–	–	–	–
North Adams,	22,150	4	2	3	–	–	–	–	–
Northampton,	21,075	7	0	2	2	–	–	–	–
Chicopee,	21,049	6	4	–	–	–	–	–	–
Medford,	20,921	2	–	–	–	–	–	–	–
Beverly,	16,386	3	1	–	–	–	–	–	–
Leominster,	16,030	5	–	3	2	1	–	–	–
Hyde Park,	15,609	4	–	–	–	–	–	–	–
Melrose,	15,459	5	0	1	–	1	–	–	–
Newburyport,	14,834	7	2	3	1	1	–	–	–
Revere,	14,820	3	1	1	1	–	–	–	–
Westfield,	14,750	4	2	1	1	–	–	–	–
Woburn,	14,522	5	0	–	–	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	4	1	–	–	–	–	–	–
Attleborough,	13,913	3	0	–	–	–	–	–	–
Adams,	13,685	1	1	1	–	–	–	–	–
Clinton,	13,105	2	2	–	–	–	–	–	–
Gardner,	13,066	2	–	–	–	–	–	–	–
Milford,	12,722	–	–	–	–	–	–	–	–
Watertown,	12,676	1	0	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	3	0	1	–	1	–	–	–
Weymouth,	11,798	4	0	2	2	–	–	–	–
Framingham,	11,749	2	1	–	–	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	1	1	–	–	–	–	–	–
Greenfield,	10,140	1	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,327,727	589	177	167	43	48	3	–	2

[1] The populations were estimated upon the rate of growth from 1900 to 1905. Those of Taunton, Gloucester, North Adams and Clinton were allowed to stand as in 1905, having shown no increase during the five-year period. The gain in the population of Lowell is due to the annexation of a part of the town of Tewksbury. The population of Lawrence by the census of 1905 was 70,050, but, owing to the building of the new Wood and Arlington mills, an increase of about 8,000 is estimated by the Lawrence board of health, or 78,000.

WEEK ENDING JULY 10, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	180	46	54	15	17	2	1	1
Worcester,	136,476	28	12	6	–	3	–	–	–
Fall River,	106,486	50	40	33	–	3	–	–	–
Cambridge,	102,112	23	7	9	4	3	–	–	–
Lowell,	96,380	24	6	4	1	–	–	–	–
New Bedford,	85,516	24	9	8	2	2	–	–	–
Lynn,	84,623	19	4	3	–	1	1	–	–
Springfield,	84,237	19	10	11	1	–	–	–	1
Lawrence,	78,000	25	16	16	6	–	–	–	1
Somerville,	76,049	15	2	4	2	2	–	–	–
Brockton,	55,039	15	7	5	–	1	–	–	–
Holyoke,	53,590	19	11	10	1	1	–	–	–
Malden,	41,941	8	2	2	–	2	–	–	–
Chelsea,	40,080	3	0	–	–	–	–	–	–
Newton,	39,642	6	1	1	–	1	–	–	–
Salem,	39,019	7	–	2	–	–	–	–	–
Haverhill,	38,362	4	–	1	1	–	–	–	–
Fitchburg,	34,263	11	5	9	3	2	–	–	2
Everett,	33,597	2	1	1	–	–	–	–	–
Quincy,	31,937	2	–	1	–	1	–	–	–
Taunton,	30,967	7	–	1	–	1	–	–	–
Waltham,	28,761	8	2	–	–	–	–	–	–
Pittsfield,	27,932	8	–	1	–	1	–	–	–
Brookline,	26,674	1	–	–	–	–	–	–	–
Gloucester,	26,011	2	–	–	–	–	–	–	–
North Adams,	22,150	4	3	2	–	–	–	–	–
Northampton,	21,075	6	1	1	1	–	–	–	–
Chicopee,	21,049	10	6	–	–	–	–	–	–
Medford,	20,921	3	–	1	1	–	–	–	–
Beverly,	16,386	1	–	–	–	–	–	–	–
Leominster,	16,030	3	1	2	2	–	–	–	–
Hyde Park,	15,609	0	–	–	–	–	–	–	–
Melrose,	15,459	5	0	–	–	–	–	–	–
Newburyport,	14,834	1	1	–	–	–	–	–	–
Revere,	14,820	4	2	–	–	–	–	–	–
Westfield,	14,750	4	2	–	–	–	–	–	–
Woburn,	14,522	7	1	2	–	2	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	1	0	1	–	–	–	–	–
Attleborough,	13,913	9	3	2	–	1	–	–	–
Adams,	13,685	4	2	3	–	1	1	–	–
Clinton,	13,105	3	0	–	–	–	–	–	–
Gardner,	13,066	3	–	–	–	–	–	–	–
Milford,	12,722	2	0	1	–	1	–	–	–
Watertown,	12,676	3	0	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	1	–	–	–	–	–	–	–
Weymouth,	11,798	2	1	1	–	–	–	–	–
Framingham,	11,749	3	1	1	1	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	3	–	1	–	–	–	–	–
Greenfield,	10,140	1	–	–	–	–	–	–	–

Recapitulation.

Total of reporting towns,	2,379,468	593	205	200	41	46	4	1	5

WEEK ENDING JULY 17, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM—					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	163	44	54	9	25	2	1	–
Worcester,	136,476	36	14	8	3	–	–	–	–
Fall River,	106,486	55	39	38	3	2	–	–	–
Cambridge,	102,112	18	2	4	–	2	–	1	–
Lowell,	96,380	42	16	11	1	4	–	–	–
New Bedford,	85,516	20	7	6	1	2	–	–	–
Lynn,	84,623	17	4	4	–	2	–	–	–
Springfield,	84,237	28	10	9	–	3	–	–	–
Lawrence,	78,000	35	21	20	3	3	–	–	–
Somerville,	76,049	9	3	3	1	1	–	–	1
Brockton,	55,039	12	5	7	1	3	–	–	–
Holyoke,	53,590	22	10	8	1	1	–	–	–
Malden,	41,941	14	5	5	–	1	2	1	–
Chelsea,	40,080	16	7	1	–	1	–	–	–
Newton,	39,642	8	1	3	–	2	1	–	–
Salem,	39,019	18	7	5	1	1	–	–	–
Haverhill,	38,362	5	–	–	–	–	–	–	–
Fitchburg,	34,263	8	2	–	–	–	–	–	–
Everett,	33,597	8	2	1	–	–	–	–	–
Quincy,	31,937	4	2	–	–	–	–	–	–
Taunton,	30,967	9	2	1	–	–	–	–	–
Waltham,	28,761	5	–	1	–	–	–	1	–
Pittsfield,	27,932	3	–	3	–	3	–	–	–
Brookline,	26,674	2	–	–	–	–	–	–	–
Gloucester,	26,011	8	3	1	–	1	–	–	–
North Adams,	22,150	9	5	4	–	1	–	–	–
Northampton,	21,075	5	2	1	–	–	–	–	–
Chicopee,	21,049	6	5	–	–	–	–	–	–
Medford,	20,921	7	2	1	–	–	–	–	–
Beverly,	16,386	2	–	–	–	–	–	–	–
Leominster,	16,030	3	–	–	–	–	–	–	–
Hyde Park,	15,609	2	–	–	–	–	–	–	–
Melrose,	15,459	5	0	1	–	1	–	–	–
Newburyport,	14,834	1	–	–	–	–	–	–	–
Revere,	14,820	3	1	2	1	–	–	–	–
Westfield,	14,750	4	1	–	–	–	–	–	–
Woburn,	14,522	5	3	1	–	–	1	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	2	0	1	1	–	–	–	–
Attleborough,	13,913	2	1	–	–	–	–	–	–
Adams,	13,685	–	–	–	–	–	–	–	–
Clinton,	13,105	6	0	1	–	1	–	–	–
Gardner,	13,066	3	0	–	–	–	–	–	–
Milford,	12,722	5	2	3	–	2	–	–	–
Watertown,	12,676	2	0	1	–	1	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	3	–	–	–	–	–	–	–
Weymouth,	11,798	3	0	–	–	–	–	–	–
Framingham,	11,749	2	–	–	–	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	2	–	–	–	–	–	–	–
Greenfield,	10,140	5	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,365,783	652	228	209	26	63	6	4	1

WEEK ENDING JULY 24, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	188	56	64	11	15	3	1	1
Worcester,	136,476	41	18	10	4	3	–	–	1
Fall River,	106,486	61	46	36	1	1	–	–	–
Cambridge,	102,112	23	7	11	2	7	–	–	–
Lowell,	96,380	31	12	2	–	–	–	–	–
New Bedford,	85,516	24	15	12	1	1	–	–	–
Lynn,	84,623	18	7	2	–	–	–	–	–
Springfield,	84,237	28	15	11	3	1	–	–	–
Lawrence,	78,000	21	10	10	–	3	–	–	–
Somerville,	76,049	13	3	–	–	–	–	–	–
Brockton,	55,039	6	1	1	–	–	–	–	–
Holyoke,	53,590	23	12	9	1	–	–	–	–
Malden,	41,941	5	1	–	–	–	–	–	–
Chelsea,	40,080	12	1	1	–	1	–	–	–
Newton,	39,642	4	–	1	–	1	–	–	–
Salem,	39,019	17	9	7	–	2	–	–	–
Haverhill,	38,362	13	1	2	1	–	–	–	–
Fitchburg,	34,263	7	2	–	–	–	–	–	–
Everett,	33,597	4	1	–	–	–	–	–	–
Quincy,	31,937	4	1	2	–	1	–	–	–
Taunton,	30,967	18	6	6	1	1	–	–	–
Waltham,	28,761	2	–	–	–	–	–	–	–
Pittsfield,	27,932	4	1	2	–	1	–	–	–
Brookline,	26,674	2	2	–	–	–	–	–	–
Gloucester,	26,011	6	1	–	–	–	–	–	–
North Adams,	22,150	9	3	4	–	1	–	–	–
Northampton,	21,075	3	1	1	–	1	–	–	–
Chicopee,	21,049	14	12	4	2	1	–	–	–
Medford,	20,921	2	1	–	–	–	–	–	–
Beverly,	16,386	4	1	1	–	–	–	–	–
Leominster,	16,030	5	1	–	–	–	–	–	–
Hyde Park,	15,609	2	1	1	1	–	–	–	–
Melrose,	15,459	4	0	–	–	–	–	–	–
Newburyport,	14,834	3	2	1	–	1	–	–	–
Revere,	14,820	5	3	2	1	1	–	–	–
Westfield,	14,750	6	3	–	–	–	–	–	–
Woburn,	14,522	5	2	–	–	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	4	0	2	–	–	–	2	–
Attleborough,	13,913	1	1	–	–	–	–	–	–
Adams,	13,685	–	–	–	–	–	–	–	–
Clinton,	13,105	3	0	–	–	–	–	–	–
Gardner,	13,066	3	–	–	–	–	–	–	–
Milford,	12,722	3	1	1	–	–	–	–	–
Watertown,	12,676	1	0	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	4	2	1	–	1	–	–	–
Weymouth,	11,798	3	0	1	–	1	–	–	–
Framingham,	11,749	5	2	–	–	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	4	–	2	1	1	–	–	–
Greenfield,	10,140	0	–	–	–	–	–	–	–

Recapitulation.

Total of reporting towns,	2,365,783	668	264	210	30	46	3	3	2

WEEK ENDING JULY 31, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM—					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	202	80	78	12	14	2	5	3
Worcester,	136,476	41	15	14	2	4	–	–	1
Fall River,	106,486	68	37	43	2	4	–	–	1
Cambridge,	102,112	26	8	13	–	5	–	–	–
Lowell,	96,380	32	19	14	–	3	–	–	–
New Bedford,	85,516	42	28	26	3	1	–	1	–
Lynn,	84,623	22	8	4	–	–	1	–	–
Springfield,	84,237	37	14	18	1	3	1	–	–
Lawrence,	78,000	39	23	17	1	1	1	–	1
Somerville,	76,049	12	1	4	1	1	2	–	–
Brockton,	55,039	8	2	2	–	1	1	–	–
Holyoke,	53,590	37	21	22	3	2	–	1	1
Malden,	41,941	9	3	4	1	2	–	–	–
Chelsea,	40,080	5	2	2	–	2	–	–	–
Newton,	39,642	7	2	1	–	–	1	–	–
Salem,	39,019	16	10	6	–	1	–	–	–
Haverhill,	38,362	10	5	7	1	1	–	–	–
Fitchburg,	34,263	10	5	1	1	–	–	–	–
Everett,	33,597	1	1	1	1	–	–	–	–
Quincy,	31,937	8	2	3	–	2	–	–	–
Taunton,	30,967	14	6	6	–	–	–	–	–
Waltham,	28,761	9	2	3	1	1	1	–	–
Pittsfield,	27,932	9	1	1	–	1	–	–	–
Brookline,	26,674	2	–	–	–	–	–	–	–
Gloucester,	26,011	–	–	–	–	–	–	–	–
North Adams,	22,150	10	6	5	–	–	–	–	–
Northampton,	21,075	10	1	–	–	–	–	–	–
Chicopee,	21,049	14	10	2	–	1	–	–	–
Medford,	20,921	5	–	2	–	1	–	1	–
Beverly,	16,386	7	1	2	–	1	1	–	–
Leominster,	16,030	6	2	–	–	–	–	–	–
Hyde Park,	15,609	5	2	1	–	–	–	–	–
Melrose,	15,459	2	0	–	–	–	–	–	–
Newburyport,	14,834	8	1	2	1	1	–	–	–
Revere,	14,820	1	–	–	–	–	–	–	–
Westfield,	14,750	8	3	1	–	1	–	–	–
Woburn,	14,522	3	–	1	–	–	–	1	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	4	1	1	–	–	–	–	–
Attleborough,	13,913	4	2	1	–	–	–	–	–
Adams,	13,685	6	5	1	–	–	–	1	–
Clinton,	13,105	5	–	–	–	–	–	–	–
Gardner,	13,066	1	–	–	–	–	–	–	–
Milford,	12,722	–	–	–	–	–	–	–	–
Watertown,	12,676	2	–	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	6	5	2	–	–	–	–	–
Weymouth,	11,798	0	–	–	–	–	–	–	–
Framingham,	11,749	2	1	–	–	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	0	–	–	–	–	–	–	–
Greenfield,	10,140	0	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,340,735	775	335	312	31	54	11	10	7

WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.

DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF JULY 3, 10, 17, 24 AND 31, 1909.

DISEASE.	Place.	WEEK ENDING—				
		July 3.	July 10.	July 17.	July 24.	July 31.
Cerebro-spinal meningitis,	Boston,	1	1	–	2	–
	Cambridge,	–	–	–	–	1
	Everett,	–	–	1	–	–
	Fall River,	–	–	1	–	–
	Fitchburg,	–	1	–	–	–
	Haverhill,	–	–	–	1	–
	Lowell,	–	–	–	–	1
	Medford,	–	–	1	–	–
	Worcester,	–	–	1	–	1
Scarlet fever,	Adams,	1	1	–	–	–
	Boston,	1	3	1	1	–
	Fitchburg,	–	1	–	–	–
	Lawrence,	–	1	–	–	–
	Newton,	1	–	–	–	–
	Springfield,	–	–	1	2	4
	Worcester,	–	–	–	1	–
Whooping cough,	Boston,	–	1	–	2	–
	Brockton,	1	–	–	–	–
	Everett,	–	1	–	–	–
	Haverhill,	1	–	–	–	–
	Holyoke,	–	–	1	–	–
	Lowell,	–	2	–	–	–
	Worcester,	–	–	1	–	1
Erysipelas,	Boston,	–	2	–	–	–
	Brockton,	–	1	–	–	–
	Holyoke,	1	–	–	–	–
	Newburyport,	1	–	–	–	–
	Quincy,	–	–	–	1	–
Tuberculosis other than pulmonary.	Arlington,	–	1	–	–	–
	Boston,	3	6	1	5	–
	Brockton,	–	–	1	–	–
	Brookline,	1	–	–	–	–
	Cambridge,	–	–	–	–	1
	Chelsea,	1	–	–	–	–
	Chicopee,	–	–	–	–	1
	Haverhill,	1	–	–	–	–
	Holyoke,	–	–	–	1	–
	Lawrence,	1	–	1	–	1
	Marlborough,	–	1	–	–	–
	North Adams,	1	–	–	1	–

DISEASE.	Place.	Week ending — July 3.	July 10.	July 17.	July 24.	July 31.
Tuberculosis other than pulmonary — *Con.*	Quincy,	–	–	–	–	1
	Revere,	–	–	1	–	–
	Salem,	–	–	1	–	–
	Springfield,	–	–	–	–	1
	Taunton,	1	–	–	–	–
Meningitis other than cerebro-spinal.	Attleborough,	–	2	–	–	–
	Lynn,	–	1	2	1	1

WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

Cases of Infectious Diseases reported during the Weeks of July 3, 10, 17, 24 and 31, 1909.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending — July 3.	July 10.	July 17.	July 24.	July 31.
Diphtheria,	48	95	92	94	92
Measles,	210	381	204	182	112
Scarlet fever,	40	76	94	73	65
Typhoid fever,	21	30	32	28	46
Tuberculosis, pulmonary,	104	129	151	167	155
Cerebro-spinal meningitis,	–	2	5	8	3
Whooping cough,	5	13	42	24	22
Varicella,	21	13	2	13	16
Erysipelas,	1	–	–	1	–
Mumps,	–	2	1	–	1
Ophthalmia neonatorum,	–	1	8	2	6
Tuberculosis other than pulmonary,	1	1	–	–	1
Smallpox,	1	–	–	–	–
Leprosy,	–	–	–	–	–
Trichinosis,	–	–	–	–	–
Tubercular meningitis,	–	–	–	–	–
Tetanus,	–	–	3	4	1
Trachoma,	–	–	–	1	–
Malignant pustule,	–	–	–	1	–

MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of July, 1909: —

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Ale,	1	–	1	Milk,	353	176	529
Baking powder,	1	–	1	Non-alcoholic drinks,	3	–	3
Canned fruit and vegetables,	2	–	2	Olive oil,	9	6	15
Cider,	1	1	2	Pickles,	3	–	3
Clams,	1	–	1	Salad dressing,	1	–	1
Confectionery,	1	–	1	Sausages,	1	–	1
Cream,	12	–	12	Spice (mace),	1	–	1
Cream of tartar,	1	–	1	Table sauce,	3	–	3
Drugs,	39	3	42	Vinegar,	12	3	15
Extract of vanilla,	1	–	1				
Hamburg steak,	2	–	2	Total,	449	189	638
Maple syrup,	1	–	1				

The samples of drugs found to be adulterated were olive oil and tincture of iodine.

The cities and towns in which samples were collected were: Auburn, Bedford, Beverly, Boston, Billerica, Braintree, Burlington, Cambridge, Chelsea, Clinton, Concord, Fitchburg, Gloucester, Great Barrington, Harvard, Haverhill, Hingham, Hudson, Hyde Park, Ipswich, Lawrence, Lee, Lenox, Lexington, Lincoln, Lowell, Malden, Millis, Nantucket, New Bedford, North Andover, North Attleborough, Northborough, Oak Bluffs, Peabody, Pittsfield, Provincetown, Plymouth, Quincy, Salem, Somerville, South Framingham, Stockbridge, Sutton, Vineyard Haven, Wakefield, Winchester, and Worcester.

PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING TO FOOD AND DRUGS.

Sixteen convictions were secured during the month of July, 1909, for selling adulterated food and drugs, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	Paul C. Klein,	Boston,	Mercurial ointment (53.6 per cent. U. S. P.).[1]
2	William E. Megett,	Worcester,	Oleomargarine.
3	Roger S. Abbott,	Beverly,	Milk (watered; total solids, 10.58).
4	George P. Becket (driver for H. P. Hood & Sons),	Revere,	Milk (watered; total solids, 11 20).
5	Albert M. Brown,	Harvard,	Milk (total solids, 11.02).
6	Albert M. Brown,	Harvard,	Milk (watered; total solids, 10 20).
7	Isaac B. Cook,	Lincoln,	Milk.[1]
8	William Fleming,	Medford,	Milk (skimmed milk, 3 cans not marked).
9	William Fleming,	Medford,	Milk (total solids, 11.94).
10	Albert L. Forbush,	Braintree,	Milk.
11	John H. Hargrove,	Lexington,	Milk.
12	Harry Mack,	Winchendon,	Milk.
13	Frank T. Moore,	Peabody,	Milk (total solids, 10.80).[1]
14	Frank T. Moore,	Peabody,	Milk (watered; total solids, 11.04).[1]
15	Patrick J. O'Leary,	Methuen,	Milk (total solids, 11.37).
16	Elliot M. Whitcomb,	Winchendon,	Milk.

[1] Appealed.

Fines imposed, $409.70.

LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR JULY, 1909.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
521 R	Olive oil,	San Pietro Brand,	Contained 90 per cent. cotton-seed oil.
q 3379	Olive oil,	Rice & Shannon, South Framingham, Mass.,	Contained 100 per cent. cotton-seed oil.
1894 M	Tincture iodine,	C. F. Lane, M.D., Vineyard Haven, Mass.,	Contained 58 per cent. U. S. P. strength.
429 R	Milk,	Henry H. Wehry, Dalton, Mass.,	Total solids, 11.16 per cent.; fat, 2.80 per cent.; proteid, 3 per cent.; skimmed milk.
573 R	Milk,	John H. Hargrove, Lexington, Mass.,	Total solids, 11.68 per cent.; fat, 2.60 per cent.; proteid, 3 41 per cent.; skimmed milk.
665 R	Milk,	Max W. Schraut, Braintree, Mass.,	Total solids, 10.54 per cent.; fat, 2 per cent.; proteid, 3.01 per cent.; skimmed milk.
681 R	Milk,	Emma G. Forbush, Braintree, Mass.,	Total solids, 10.80 per cent.; fat, 2.60 per cent.; proteid, 2.99 per cent.; skimmed milk.
701 R	Milk,	Harry Mack, Winchendon, Mass.,	Total solids, 11.84 per cent.; fat, 2.90 per cent.; proteid, 3.37 per cent.; skimmed milk.
q 3395	Milk,	Willard O. Putnam, North Andover, Mass,	Total solids, 11.24 per cent.; fat, 2.75 per cent.; proteid, 3.10 per cent.; skimmed milk.
q 3404	Milk,	Geo. E. Waldon, West Gloucester, Mass.,	Total solids, 11.52 per cent.; fat, 3 per cent.; proteid, 3.17 per cent.; skimmed milk.
q 3408	Milk,	John G. Nutton, Gloucester, Mass.,	Total solids, 11.52 per cent.; fat, 2.60 per cent.; proteid, 3.16 per cent.; skimmed milk.
10063	Milk,	Berry Beleveau, Gloucester, Mass.,	Total solids, 7.72 per cent.; fat, 1.10 per cent.; proteid, 2.20 per cent.; skimmed milk; also contained added water.
559 R	Milk,	Isaac B. Cook, Lincoln, Mass.,	Total solids, 11.56 per cent.; contained added water.
667 R	Milk,	Max W. Schraut, Braintree, Mass.,	Total solids, 9.92 per cent.; contained added water.
765 R	Milk,	John A. Burgner, Dalton, Mass.,	Total solids, 9.45 per cent.; contained added water.
845 R 847 R	Milk,	Edgar A. Sargent, Sutton, Mass.,	Total solids, 10.46 per cent.; contained added water. Total solids, 11.04 per cent.; contained added water.
853 R	Milk,	Charles R. Luther, Sutton, Mass.,	Total solids, 11.74 per cent.; contained added water.
q 3348	Milk,	Roger S. Abbott, Beverly, Mass.,	Total solids, 10.58 per cent.; contained added water.

q 3394	Milk, ...	Willard O. Putnam, North Andover, Mass., . . .	Total solids, 9.34 per cent.; contained added water.
9991	Milk, ...	Michael L. Tavitian, Plaistow, N. H., . . .	Total solids, 11.06 per cent.; contained added water.
9992			Total solids, 8.92 per cent.; contained added water.
9999	Milk, ...	William H. Bansley, Haverhill, Mass., . . .	Total solids, 10.66 per cent.; contained added water.
10000			Total solids, 10.86 per cent.; contained added water.
10115	Milk, ...	Henry C. Lyons, Haverhill, Mass., ...	Total solids, 8.22 per cent.; contained added water.
10116			Total solids, 10.18 per cent.; contained added water.
10117			Total solids, 9.78 per cent.; contained added water.
1702 N	Milk, ...	Albert M. Brown, Harvard, Mass., ...	Total solids, 10.20 per cent.; contained added water.
1964 N	Milk, ...	Willis E. Wheeler, Northborough, Mass., . .	Total solids, 11.42 per cent.; contained added water.
1966 N			Total solids, 11 77 per cent.; contained added water.

INSPECTION OF DAIRIES.

During the month of July, 1909, 53 dairies were examined in the following places: —

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number to which Letters were sent.	Per Cent.
Cheshire,	3	1	33.33	2	66.67
Dalton,	–	–	–	–	–
Second inspection,	7	3	42.86	4	57.14
Lanesborough,	14	1	7.14	13	92.86
Second inspection,	7	1	14.29	6	85.71
Lenox,	5	–	–	5	100.00
Second inspection,	2	–	–	2	100.00
Pittsfield,	4	–	–	4	100.00
Second inspection,	11	2	18.18	9	81.82

Total number of dairies examined,	53
Number found to be free from objectionable conditions,	8
Number to which letters were sent,	45
Total number of conditions to which attention was called,	132
Percentage of dairies which passed inspection,	15.09

The names of the owners of dairies found to be worthy of commendation follow: —

Cheshire.

Beers, W. T.

Dalton.

Burgner, John A.* Locke, Gotthardt * Wherry, H. H.*

Lanesborough.

Baker, L. A.*† Boyington, Wm.

Pittsfield.

Marshall, M. T.* Weller, E.*†

* Second inspection. † Reported favorably on first inspection.

THE OCCURRENCE OF INFANTILE PARALYSIS IN MASSACHUSETTS IN 1908.

(SECOND PAPER.[1])

By Robert W. Lovett, M.D., Boston.

[Reported for the Massachusetts State Board of Health.]

In pursuance of the policy inaugurated in 1907, the State Board of Health in 1908 continued the investigation into the occurrence and distribution of cases of infantile paralysis in the State of Massachusetts, with especial reference to etiology. As in the previous year, circulars were sent to all physicians asking them to report to the Board cases coming under their observation, and to physicians reporting cases blanks were sent to be filled out. From these blanks the following data were obtained.

Physicians seeing such cases were also requested to forward to Dr. Theobald Smith, pathologist of the Board, fresh specimens of stools from acute cases for bacteriological study, with reference, of course, to etiology. It is not possible as yet to state the results of these examinations. The Board has already started on the investigation of these cases for 1909, which will follow much the same lines as those of the two previous years, with especial efforts to obtain fresh stools for examination. Again the Board desires to express to the medical profession its gratitude for the most willing and helpful co-operation.

The present paper will first present a brief abstract of the literature dealing with the epidemiology of the affection appearing since the last report ("Boston Medical and Surgical Journal," July 30, 1908), and, second, an account of the features of the disease as occurring in the State in 1908. The serious epidemic which occurred in 1908 in Franklin County will be dealt with separately by Dr. H. C. Emerson, who investigated it on behalf of the Board.

Abstract of Important Literature.

Bacteriology and Experimental Production. — The most valuable contribution of the year toward our knowledge of the disease has been made by Landsteiner and Popper of Vienna,[2] who have apparently

[1] This article first appeared in the "Boston Medical and Surgical Journal" for July 22, 1909.

[2] Zeitschrift für Immunitätsforschung und experimentelle Therapie, 1909, Bd. II. heft 4, teil 1.

succeeded in producing the disease in monkeys by inoculation. A boy of eight died of the disease on the fourth day. The autopsy showed typical anterior poliomyelitis. In the spinal cord and cerebro-spinal fluid there were no organisms to be found and cultures were sterile. Parts of the spinal cord were then emulsified in salt solution and injected into the abdominal cavity of rabbits, guinea pigs, mice and two monkeys. In the first three named no paralysis ensued and the spinal cords were normal.

The first monkey became violently ill on the sixth day and died on the eighth. He lay on the floor of his cage and his power to move his limbs was not investigated. After death changes typical of anterior poliomyelitis were found.

The second monkey was noted to have lost all power in the hind legs on the seventeenth day. No paralysis was present on the twelfth, although it may have been present before the seventeenth in some degree. He was killed on the nineteenth day, and again typical pathological changes were found in the central nervous system.

From the spinal cord of this monkey inoculations were made into two other monkeys, with negative results.

The conclusion of these authors is that "a so-called invisible virus, that is, one belonging to the class of the protozoa, is the cause of the disease."

With regard to the affection of domestic animals in epidemics of infantile paralysis, this was alluded to in the Rutland epidemic, reported by Caverly[1] in 1894 (horses and poultry). Dana investigated a hen with paralysis and found the bacteriology negative, and the changes in the cord "acute infectious softening rather than myelitis."[2] It was noted by Wickman that in the Swedish epidemic of 1903 dogs were apparently affected in many instances with the children, but he was not convinced of the identity of the two affections.[3] Frost reported that pigs and chickens were affected in the Michigan epidemic, alluded to below. The attention of the State Board of Massachusetts has been called to the occurrence of infantile paralysis in a mother and daughter shortly after an epidemic of "leg weakness" in the chickens of the household, and the matter is under investigation.

Pasteur,[4] Foullerton and MacCormac investigated the cerebro-spinal fluid of a case of poliomyelitis, finding in it mononuclear round cells. On staining, large cocci grouped in pairs and tetrads were found eleven days and four weeks after the onset of the disease. Cultures were

[1] Wickman: Beitr. z. Kenntniss der Heine-Medinischen krankh. Berl., 1907.
[2] N. Y. Med. Rec., Dec. 1, 1894.
[3] Boston Med. and Surg. Jour., 1895, III., p. 14.
[4] Lancet, 1908, vol. I., 484.

negative. Nine rabbits were inoculated with the fluid, of which some were paralyzed after about six weeks and the cord and spinal fluid of one of these was again inoculated into other rabbits, with positive results. The inoculation from this series was negative.

Cocci which did not grow were found in the spinal fluid of affected animals, but in the one cord examined there were no changes in the ganglion cells or about the vessels. The conclusion of these authors, that anterior poliomyelitis is not the result of a specific cause, is disputed by others on the ground that the experimental paralysis is not anterior poliomyelitis (Wickman, Landsteiner and Popper).

Epidemics Recently Reported.

In Salem,[1] Va., and vicinity occurred between June 2 and Aug. 10, 1908, 25 cases; the neighboring city of Roanoke, seven miles distant, in close communication with Salem, escaped with 1 case. The cases all occurred in children under six, the youngest being thirteen months old. The death-rate was 12 per cent.

In September, 1908, there occurred "a number of cases" in and about Whittemore, Ia.[2] The following regulation was passed by the State Board of Health of Iowa: "It is hereby ordered by the State Board of Health that all physicians and osteopaths practicing in Iowa shall promptly report to the mayor or township clerk all cases of poliomyelitis occurring in their district," etc.

In central Wisconsin,[3] in the summer of 1908, there occurred an epidemic, with 60 cases in one of the smaller cities and 14 deaths.

In central Pennsylvania the disease was active in the summer of 1907,[4] 100 cases having been seen in and about Dubois, and Sinkler[5] estimated that in Philadelphia 30 per cent. more cases than usual were seen in that summer. Sinkler elsewhere[6] speaks of the etiology as follows: "The nature and progress of the disease indicate clearly that it is due to an infection. It is obvious, therefore, that the micro-organism which produces the infection is one which is developed by hot weather. A large proportion of cases have some form of intestinal trouble. . . . It is probable, therefore, that the micro-organism producing the disease has found its entrance into the system through the intestinal tract and thence to the spinal cord."

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[1] Wiley and Darden: Jour. Am. Med. Asso., Feb. 20, 1909, p. 617.
[2] Iowa Health Bull., November, 1908, xxii., No. 5.
[3] Informal communication from Wisconsin State Board of Health.
[4] Free: Jour. Nerv. and Ment. Dis., April, 1908, p. 259.
[5] Sinkler: *Ibid.*, p. 260.
[6] Arch. of Diagnosis, January, 1908, p. 31.

McCombs[1] contributed a study from the Philadelphia Children's Hospital of the disease as observed at that institution between 1903 and 1907, showing 50 per cent. more cases occurring in the summer of 1907 than the sum of all cases for the preceding four years. Forty-three cases in all were analyzed.

Manwaring[2] reported an epidemic of 30 cases in Flint, Mich., occurring in the summer of 1908, and alluded to[3] other epidemics in the State, one in Western Michigan, reported by Ostrander, and another in Chesaning.

In the Flint epidemic the average age of affected cases was ten years. Of cases under ten all lived, between ten and twenty the mortality was 25 per cent., over twenty the rate was 75 per cent., corresponding to Wickman's observations.

Griffin[4] described an epidemic of 20 cases in Oceana County, Mich., occurring between July and September, 1907.

Twenty-nine cases were reported by Clowe[5] as having occurred in Schenectady in the summer of 1907. There were 2 deaths in adults and 10 of the cases were seriously sick; 5 were classed as having made a complete recovery; 19 cases were less than four years old.

Partial reports[6] of the New York epidemic of 1907 have already appeared in various articles. It seems best to wait for the published reports of the committee appointed to investigate the epidemic before analyzing the conclusions reached.

In and about Vienna, in the summer of 1908, between the end of July and October, there occurred many cases of infantile paralysis, more, according to Zappert,[7] than had been seen since 1895. He notes the large proportion of older children to be affected, and speaks of it as a frequent occurrence in large epidemics.

An epidemic occurred in Victoria,[8] Australia, in their autumn of 1908, selecting the months of March to June. It occurred chiefly in the most densely populated suburbs of Melbourne. There were 6 deaths in 135 cases recorded, and the bacteriological findings are not sufficiently clearly given in the abstract, which alone is available, to be commented on.

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[1] Arch. of Pediatrics, January, 1908, p. 36.

[2] Jour. Mich. State Med. Soc., April, 1909.

[3] *Ibid.*, February, 1908.

[4] Wickman: Studien über Pollom. Acuta, Berlin, 1905.

[5] Albany Med. Jour., 1908, XXIX., p. 799.

[6] H. W. Berg: N. Y. Med. Rec., 1908, LXXIII., p. 1; Joseph Collins: *Ibid.*, 1907, LXXII., p. 725; Terriberry: *Ibid.*, 1907, LXXII., p. 920; Jennings: Med. Rev. of Reviews, May, 1908, p. 197; Collins and Romeiser: Jour. Am. Med. Asso., May 30, 1908, p. 1766; Starr: *Ibid.*, July 11, 1908, p. 112 (with list of epidemics); V. P. Gibney and C. Wallace: *Ibid.*, Dec. 21, 1907, p. 2082.

[7] Wien. med. Wochenschr., 1908, XLVII., 2563.

[8] H. D. Stephen: Intercol. Med. Jour. of Australasia, November, 1908; Abst. Lancet, April 3, 1909, p. 999.

Byron Bramwell[1] presented an analysis of 76 cases observed by him, reaching over a period of years.

One of two inferences is possible from the literature of the last year or so: either the disease is increasing rapidly in this country, or the attention of the medical profession has been called to the disease and more cases and epidemics have been recognized and reported.

Cases reported in Massachusetts.

Occurrence and Distribution. — As against 234 cases of infantile paralysis reported in 1907 only 136 cases were reported in 1908. It is interesting to note in this connection that, in 1907, 444 cases of cerebro-spinal meningitis were reported, while in 1908 there were only 183 cases. It was noted in the previous report that the two diseases, however, reached their maximum at different seasons.

In 1907 the cases of infantile paralysis in their distribution in a general way corresponded to the density of population in the State, grouping themselves as a rule about the centers of densest population, and only in and about Pittsfield, where some 28 cases occurred, was there evidence of any marked epidemic. (See map for 1907, following p. 146.)

In 1908, however, the grouping of cases was largely different, and bore slight relation to the density of population, and as a rule, where the disease was prevalent in 1907 it was rare in 1908, thus corresponding to the conclusions reached by Scandinavian investigators, that regions severely affected one year were for a while comparatively immune. As against 28 cases in the western end of the State in 1907 there were only 3 in 1908. In and about Lowell, Fall River and Haverhill there were in 1908, as in 1907, apparent slight centers of infection.

About half (69) of the cases reported in the State occurred in Franklin County, the remainder (67) being distributed through the State.

Cerebro-spinal meningitis, however, in the year 1908 showed practically the same distribution as in 1907, in general being grouped about the densest population. These comparisons are made because cerebro-spinal meningitis is an infectious disease, apparently mildly contagious,[2] affecting many children, and manifested in the central nervous system. Presenting these points of similarity it has been thought that its characteristics might possibly in the future throw some light on the disease under consideration.

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[1] Scot. Med. and Surg. Jour., June, 1908, p. 501.

[2] Edler and Huntoon: Jour. of Med. Research, June, 1909.

For purposes of simplicity the epidemic in Franklin County will be dealt with separately by Dr. Emerson, and in the following analysis will be considered *only* the cases occurring in the State at large. The two analyses taken together will give the occurrence of the disease in the whole State.

The *distribution* of the 67 cases may be seen in the map for 1908, following p. 146.

Contagion has been so carefully studied in the epidemic that it will not be dwelt on here.

Traumatism. — In 1 case a history of exposure to dampness was given, and in 9 cases histories of trauma preceding the disease. These histories, however, were in many instances vague and unreliable.

Season of Onset. — Cases occurred as follows: January, 1; February, 1; March, 1; May, 2; June, 1; July, 9; August, 11; September, 14; October, 15; November, 7; date not given, 5.

The season of onset does not differ materially from that in 1907, but does differ essentially from the season of onset in Franklin County, where it was as follows: March, 1; April, 1; June, 6; July, 28; August, 26; September, 5; November, 2.

Age. — The largest number of cases (19) occurred between the ages of one and two, and for the years from two to eight there were reported from 3 to 8 cases for each age; after this the reported cases were 1 or 2 a year up to 16. There were 2 adult cases reported, one twenty-one and one forty.

Sex. — There were 39 males, 26 females and 2 not stated.

As to other factors of possible interest in the etiology, 38 lived in detached houses and 27 in tenements, while 2 were not stated. Of the cases in tenements, 12 of the patients lived on the first floor, 10 on the second, 4 on the third and 1 in the basement. Sanitary conditions were described as excellent in 24, good in 20, fair in 16, bad in 5.

Symptoms. — In 54 cases fever was present, the temperature ranging from 100 to 104. In 1 case no fever was present. In 12 cases no record given. Brain symptoms occurred in 15 cases. There was usually delirium during the febrile state. Vomiting is recorded in 21 cases, constipation in 20 and diarrhœa in 8. Retraction of the head present in 10 cases. Pain is recorded in 46 cases, absent in 2. The pain was usually along the distribution of the paralysis and did not, as a rule, subside at once after the acute attack. Incontinence of urine and feces in 2 cases, incontinence of urine in 1, retention and later incontinence of urine 1.

Relation of Beginning of Paralysis to Onset of Fever.

Paralysis preceded the attack by two days,	1
Occurred on the same day,	5
On the next day,	6
Two days later,	11
Three days later,	13
Four days later,	8
Five days later,	4
Six days later,	1
Seven days later,	3
Eight days later,	1
Ten days later,	2
Two weeks later,	1

Complete recovery is said to have occurred as follows: —

Five days from beginning of disease,	1
Ten days from beginning of disease,	1
Two weeks from beginning of disease,	3
Six weeks from beginning of disease,	1
Three months from beginning of disease,	1

Distribution of Paralysis.

One leg,	15
Both legs,	7
One arm,	8
One arm and one leg,	11
One arm and both legs,	5
Both arms and one leg,	1
Four extremities,	6
Not stated,	14
	67

Mortality. — Four cases terminated fatally, 2 dying of respiratory paralysis and 2 of exhaustion, stupor and convulsions.

Conclusions.

The conclusions which would seem warranted by the investigation of 1908 are as follows: —

That the disease was less prevalent in the State than in 1907, as was also cerebro-spinal meningitis.

That the distribution of cases was unlike that of 1907, localities affected seriously in 1907 largely escaping in 1908. That this is quite the opposite of the almost identical distribution of cerebro-spinal meningitis in the same two years.

That half of the cases occurring in the State were comprised in an epidemic in Franklin County.

Finally it may be stated that it is not to be expected that any material light will be thrown on the etiology of the disease by its observation during any one year, but it is hoped that by a study of the disease for a period of years in the same territory, conclusions of value may be established. It is also to be hoped that by the study of the stools of fresh cases some light may be thrown on the etiology.

AN EPIDEMIC OF INFANTILE PARALYSIS IN WESTERN MASSACHUSETTS IN 1908.[1]

By Herbert C. Emerson, M.D., Springfield, State Inspector of Health, District 14.

[Note.—The following investigation of this epidemic was made at the suggestion of Dr. Henry P. Walcott, chairman of the State Board of Health. The information was obtained through the courtesy and assistance of the physicians, which enabled the writer to visit the homes of all the cases reported in this epidemic. The writer spent a month living in the towns in which the epidemic occurred, and made several subsequent visits to these places.]

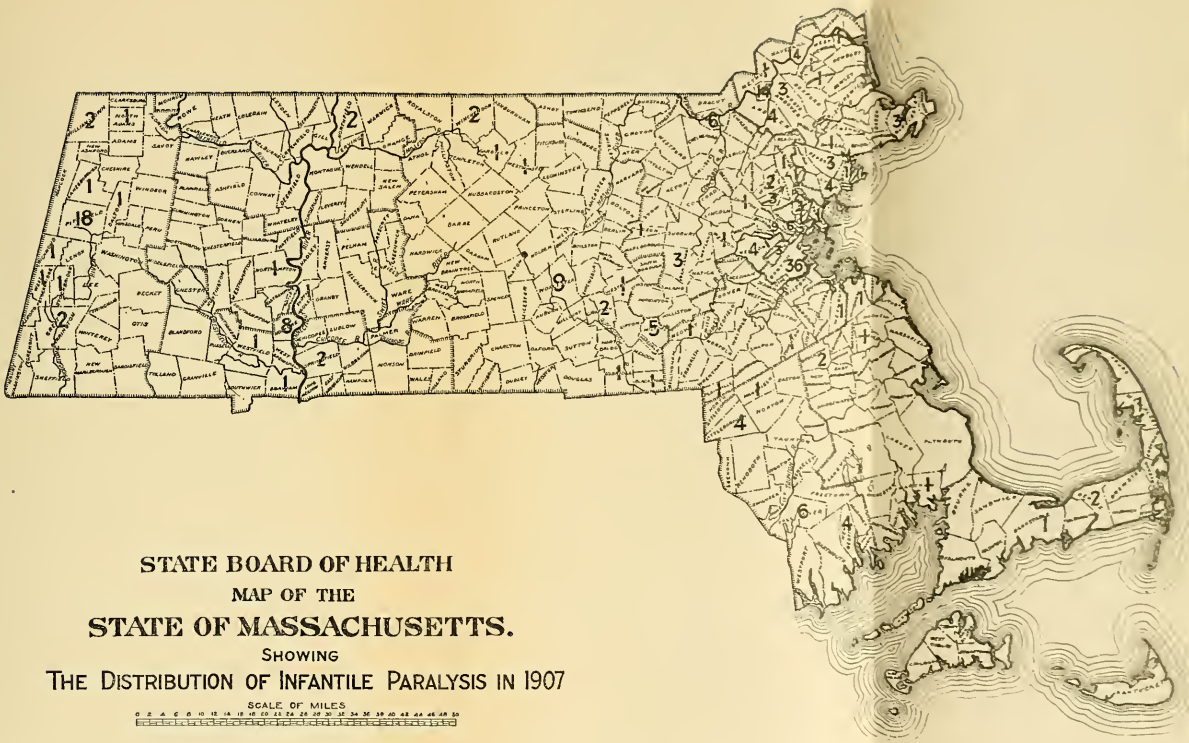
Sixty-nine cases of infantile paralysis, or approximately one-half the total number reported in the State during 1908, occurred in western Massachusetts, and were distributed as follows: —

Colrain,	24	Erving,	2
Buckland,	9	Adams,	1
Shelburne Falls,	8	Cheshire,	1
Montague,	7	Deerfield,	1
Bernardston,	5	Gill,	1
Greenfield,	4	North Adams,	1
Heath,	4	West Hawley,	1

Geographical Distribution.

Three isolated cases occurred in the extreme northwestern part of the State in three contiguous towns, viz., Cheshire (August 7), Adams (August 16), North Adams (November 3). The remaining 66 were

[1] An abstract of this article first appeared in the "Boston Medical and Surgical Journal" for July 8, 1909.



STATE BOARD OF HEALTH

MAP OF THE

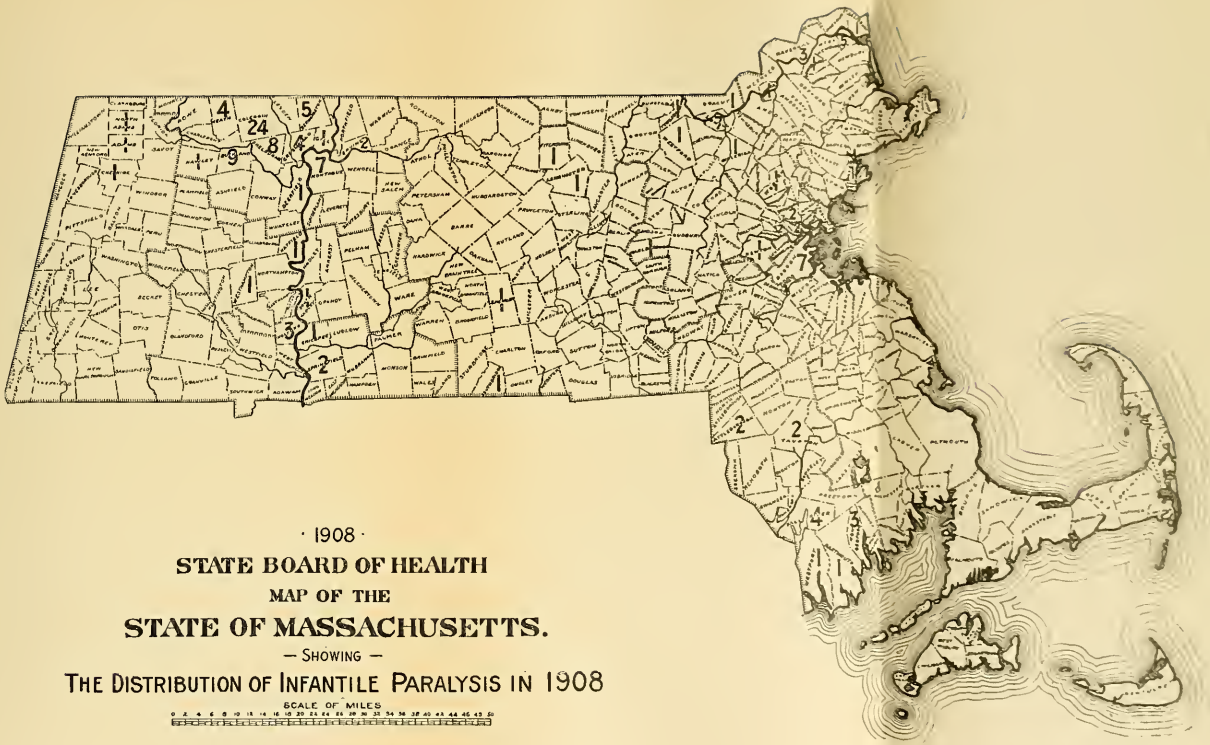
STATE OF MASSACHUSETTS.

SHOWING

THE DISTRIBUTION OF INFANTILE PARALYSIS IN 1907

SCALE OF MILES

0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50



· 1908 ·

STATE BOARD OF HEALTH

MAP OF THE

STATE OF MASSACHUSETTS.

— SHOWING —

THE DISTRIBUTION OF INFANTILE PARALYSIS IN 1908

SCALE OF MILES

0 2 4 6 8 10 13 16 18 20 23 26 29 30 33 36 38 40 43 44 46 48 50

distributed throughout a group of eleven neighboring towns in the western part of the State, south of the Vermont State line. The territory involved is a sparsely settled hill country, with numerous streams furnishing water power for various manufacturing interests. The communities are largely agricultural, with a considerable factory population in the larger towns. Most of the cases occurred in the valley of the Deerfield River (Shelburne Falls-Buckland) and that of its main feeder the North River (Colrain), and at that point on the Connecticut River (Turners Falls), where the Millers and Falls rivers empty into it. As both the valleys of the Deerfield and North rivers are very narrow the bulk of the population lives naturally very near these streams.

Twenty-four cases occurred in Colrain (population 1,800), a town of five villages, containing three cotton mills, in the narrow North River valley. Nine of these cases occurred in Griswoldville (population 350), the largest of the three mill villages. Seventeen cases occurred in the village of Shelburne Falls, a manufacturing town with a population of 2,500, which includes the villages of Shelburne Falls and Buckland, which are separated by the Deerfield River only. Six cases occurred in Turners Falls, a large manufacturing town on the Connecticut River, and 2 cases were in other towns across the river. The other cases were distributed in neighboring small towns.

Fifty-two of the 66 cases were located in the valley on these streams, while 10 of the remainder were hill cases in country districts adjacent to these towns. There were 3 scattered cases in Greenfield. The distribution of the cases is as follows: —

On the North River,	23
Hill cases adjacent,	5
On the Deerfield River (Shelburne Falls-Buckland),	13
Hill cases adjacent,	4
On the Falls River,	6
On the Connecticut River,	5
On the Connecticut River canal (Turners Falls),	2
On the Millers River,	2
Hill case adjacent,	1
On the Deerfield River (Deerfield),	1

The actual distance from the houses where the cases occurred to these streams above mentioned, including millponds, canals, etc., was found to be as follows: 4 cases were one-quarter of a mile distant; 15 cases were one-eighth of a mile distant; 33 cases were less than 500 feet distant, of which 20 cases were from 10 to 200 feet distant.

The relation of the hill cases to those in the valley was noted, and in

every case it was found that the hill cases gave a history of visiting, driving or in some way spending time in the nearby towns, which were upon the streams, as above mentioned. A trolley line runs through the North River valley connecting Colrain and Shelburne Falls, and there is also trolley connection between Greenfield, Turners Falls and Millers Falls. Transportation for the hill cases to the river towns was by wagon only. It may be stated that there was no case in the 66 under consideration which had not been exposed recently to the valley influences, if any.

In addition to the above 69 cases in western Massachusetts, 6 cases of infantile paralysis occurred in southern Vermont in territory contiguous to the Colrain district. They all appeared to be independent cases, and 4 of them were located near the Deerfield River or its branches.

Sequence of Cases.

Sixty-five of the cases occurred in the summer months, as follows: June, 6; July, 28; August, 26; September, 5; while isolated cases occurred in March, 1; April, 1; and in November, 2. The height of the outbreak appears to have been July 25, on which date 6 cases occurred in 4 towns, as follows: Bernardston, 2 (one family); Buckland, 2; Shelburne Falls, 1; Colrain, 1. The early cases occurred at various points throughout the district concerned, as follows: in Turners Falls district June 4 (the earliest case), in the Shelburne Falls district June 20, in the Colrain district July 1 (in the southern part of this territory) and July 4 (in the northerly part of this section).

The following table shows the sequence of cases as to time of onset: —

Date.	Town.	Case Number.
March 25,	Heath,	39x
April 1,	Heath,	39
June 4,	Montague (Turners Falls),	1
June 9,	Montague (Turners Falls),	2
June 13,	Montague (Turners Falls),	3
June 17,	Greenfield,	11
June 20,	Shelburne,	26
June 27,	Shelburne,	27
July 1,	Colrain (Shattuckville),	45
July 2,	Montague (Turners Falls),	4
July 4,	Colrain (Willis Place),	60
July 5,	Gill,	10
July 6,	Montague,	5
July 7,	Colrain (Frankton),	40
July 9,	Greenfield,	13
July 11,	Colrain (Griswoldville),	49
July 16,	Colrain (Frankton),	41
July 16,	Colrain (Shattuckville),	43
July 17,	Colrain (Shattuckville),	44
July 18,	Colrain (Griswoldville),	50
July 19,	Colrain (Griswoldville),	53
July 20,	Shelburne Falls,	25
July 20,	Montague,	6
July 20,	Colrain (Griswoldville),	51

Date.	Town.	Case Number.
July 23,	Colrain,	63
July 23,	Bernardston,	17
July 24,	Buckland,	29
July 25,	Shelburne Falls,	23
July 25,	Buckland,	32
July 25,	Colrain (Frankton),	42
July 25,	Buckland,	36
July 25,	Bernardston,	15
July 25,	Bernardston,	16
July 27,	Colrain (Griswoldville),	54
July 29,	Colrain (Willis Place),	59
July 29,	Shelburne Falls,	22
Aug. 2,	Colrain (Griswoldville),	56
Aug. 3,	Colrain (Shattuckville),	47
Aug. 3,	Colrain (Shattuckville),	46
Aug. 5,	Colrain (Griswoldville),	48
Aug. 7,	Greenfield,	14
Aug. 7,	Cheshire,	64
Aug. 7,	Colrain (Lyonsville),	61
Aug. 8,	Buckland,	28
Aug. 9,	Greenfield,	12
Aug. 11,	Bernardston,	18
Aug. 11,	West Hawley,	67
Aug. 12,	Colrain (Griswoldville),	57
Aug. 12,	Montague,	7
Aug. 12,	Buckland,	30
Aug. 15,	Buckland,	35
Aug. 16,	Adams,	66
Aug. 18,	Erving (Millers Falls),	8
Aug. 22,	Shelburne Falls,	24
Aug. 23,	Heath,	37
Aug. 23,	Shelburne Falls,	21
Aug. 23,	Shelburne Falls,	20
Aug. 23,	Colrain (Willis Place),	58
Aug. 24,	Colrain (Adamsville),	62
Aug. 24,	Colrain (Griswoldville),	55
Aug. 27,	Colrain (Griswoldville),	52
Aug. 29,	Buckland,	31
Sept. 4,	Bernardston,	19
Sept. 8,	Deerfield,	14x
Sept. 23,	Buckland,	33
Sept. 25,	Buckland,	34
Sept. 29,	Heath,	38
Nov. 3,	North Adams,	65
Nov. 6,	Erving (Millers Falls),	9

From this table it appears that the outbreak in the various towns, with the exception of a few small groups, was not an explosive one, but cases occurred from time to time, covering a period of from six to eight weeks in each town. The sequence of cases in groups is shown in detail under "Contact and Relation of Cases."

Contact and Relation of Cases to Each Other, taken up by Groups.

Turners Falls Village. — The first cases out of the whole number occurred in Turners Falls Village on June 4, 9 and 13. These cases came down five days apart, and it is probable that there was indirect contact between the three families, although the contact between these 3 cases was very slight, if any. Case No. 1, June 4, was near the middle of a thirty-tenement block, and was the only case in the block or on

the street. Case No. 2, June 9, was on the next street, in a four-tenement house, while Case No. 3, June 13, was in the middle of a thirty-tenement block next to the tenement house just mentioned. Case No. 1 was certainly an independent case, and probably case No. 3, while case No. 2 may not have seen case No. 1.

Independent case, 1. Contact cases, 2.

Turners Falls Suburbs. — Cases No. 11, June 17, No. 4, July 2, No. 10, July 5, and No. 5, July 6, were all independent cases, and were scattered in the suburbs of the village of Turners Falls, 3 being in Turners Falls, 1 in Greenfield and 1 in Gill, all within a mile and a half circle. Case No. 6, July 20, was a cousin of case No. 5, and lived on the second floor of the same tenement. These families were intimate, but as the children were five and eight months old, respectively, they were kept in their carriages, and there was no intimate contact between them.

Independent cases, 4. Contact case, 1.

Greenfield-Deerfield. — Case No. 13, July 9, No. 14, August 7, and No. 12, August 9, were all independent cases in Greenfield, one-half to one mile apart. No. 14x, September 8, was also an independent case, living in Deerfield.

Independent cases, 4.

Bernardston. — Two cases occurred at the same time in one family, Nos. 15 and 16, July 25. At the same time an older brother of nineteen, case No. 17, came home from logging with a headache, and went to bed and was supposed to have typhoid fever. His history and the atrophy of muscles in his right hand showed that he had infantile paralysis. A mile above this house was case No. 18, August 11. Three weeks later, September 4, a brother, case No. 19, was taken ill, having been, of course, in close contact with case No. 18.

Independent cases, 4. Contact case, 1.

Shelburne Falls. — The first case, No. 26, in this group was a primary case, and occurred June 20 on a mountain farm four miles from Shelburne Falls. There was intimate contact with a brother of fourteen and a sister of two, but not with a brother of twenty-two, who was working hard haying. Seven days later, however, he was taken sick, case No. 27, June 27. Cases No. 25, July 20, No. 23, July 25, No. 22, July 29, and No. 20 and No. 21, taken ill on the same day, August 23, were all independent cases. No. 20 and No. 21 had been more or less intimate up to the time of illness. Case No. 24, taken sick August 22, was visiting in Shelburne Falls and went daily across the river to a cousin in Buckland who was sick, case No. 36.

Independent cases, 6. Contact cases, 2.

Buckland. — Case No. 29, July 24, living on a mountain two miles from the village, was an independent case, as were cases No. 32, July 25, No. 36, July 25, No. 30, August 12, No. 31, August 29, and No. 33, September 23, living in the village. Within a day or two of the onset of case No. 33, his brother, case No. 34, was taken sick. As the history was difficult to get it cannot be stated whether his illness was coincident or a day or two later. Case No. 28, August 8, had been in contact with case No. 36, living two doors above, and was taken sick two weeks later.

Independent cases, 6. Contact cases, 2.

Colrain. — This town lies about one mile above Shelburne Falls and consists, as previously stated, of five villages: Frankton, Shattuckville, Griswoldville, Willis Place and Colrain City in the narrow North River valley. The largest number of cases was in the middle settlement, Griswoldville, and there were none in the settlement farthest north, Colrain City.

Frankton. — The Frankton group, consisting of three cases, Nos. 40, 41 and 42, had their first symptoms nine days apart, July 7, 16 and 25. These cases lived in three houses, about seventy-five feet apart. The first case, No. 40, was independent. No. 41, a child of two, had been carried by its mother when she went to inquire for No. 40, but there was no intimate connection between the children. There was an indefinite history of commingling of all the children, and No. 43 may have been in the house of No. 42 while she was ill. No. 43 was, however, recovering from a severe burn, and it is not probable that she was with the other cases while she was sick.

Independent case, 1. Contact cases, 2.

Shattuckville. — About one mile above Frankton occurred 6 cases 2 of which, No. 43 and No. 44, were in one family and were coincident, July 16 and 17. Two others, No. 46 and No. 47, were coincident cases in another family, August 3. No. 45, July 1, was an independent case, as was No. 48, taken ill August 5.

Independent cases, 6.

Griswoldville. — From one-half to a mile above Shattuckville is the village of Griswoldville, consisting of one street in a very narrow valley. Nine cases occurred here, of which No. 49, July 11, No. 50, July 18, No. 53, July 19, No. 54, July 27, No. 56, August 2, No. 55, August 24, and No. 52, August 27, were probably independent cases, there being no history of contact of these children with each other while ill. Case No. 51 had played a little with case No. 50, but had not seen her after she, No. 50, was taken sick, and she may be considered an independent case, being a member of the family of the owner of the mills and know-

ing none of these other children. Case No. 57, however, a girl of sixteen, had been taking care of case No. 56, her sister of six, and was taken sick ten days after her younger sister.

Independent cases, 8. Contact case, 1.

Willis Place. — About a mile above Griswoldville is a large twenty-seven-tenement block. At one end of this block case No. 60 was taken sick July 29 and case No. 58 at the other end of the block August 23. There was no visiting between these families after the first case was taken sick and they appear to be independent cases.

Independent cases, 3.

The 54 cases just reviewed constitute what may be called the group cases, of which 43 are independent and 11 are possible contact cases, — 7 of which are of known and 4 of possible contact. The 15 remaining cases are all independent, 9 of which are connected by location with the groups above mentioned and 6 are isolated.

Independent Cases.		
Group,	43	
Connected with the group,	9	
Isolated,	6	
	—	58
Contact Cases.		
Known,	7	
Possible,	4	
	—	11
		—
Total,		69

Two cases in same family, coincident,	3
Three cases in same family, coincident,	1
Two cases in same family, not coincident,	4[1]

Time Interval.

The time interval elapsing between the exposure and onset of symptoms of the 7 cases of known contact is as follows: 3 cases of intimate contact with intervals of twenty-four days, fourteen days and eight days; 4 cases of contact not intimate, fourteen days, nine days (two instances) and seven days. In the 4 cases of probable contact the history is too indefinite to make it worth while to estimate this time interval.

[1] One of these consisted of two families, married sisters, living on the first and second floors of same house.

Evidence of Contagion.

The following are the facts in relation to the 7 cases of known contact: case No. 6 was a female infant of five months, one of three children living in an upper tenement. She was taken ill fourteen days after her cousin, a female infant of eight months, was attacked who lived on the first floor of the same house. It is known that the infants were in the same room during the illness of the one first affected, but they were not in the same carriage or together on the same bed. Case No. 19 was a ten-year-old brother of case No. 18, and was taken sick twenty-four days later. There was no isolation, and two boys in the family were more or less intimate with the sick one. Case No. 24 shows the most intimate contact of any. She was a fifteen-year-old girl, and came to see her cousin, a boy of two, every day. She took care of him, sat by him and kissed him. Her first visit to him was three weeks after he was taken sick, when the acute symptoms had disappeared. Her first symptoms began eight days after she had first seen him. Case No. 27 was a strong farmer lad twenty-two years old. He was taken sick one week after his brother of four years. This boy was kept in the living rooms, and was intimate with two small children, but there was no intimate contact between him and the older brother, as he was very busy haying. Case No. 28, a girl of ten, lived two doors from case No. 36, a child of two years, and was a frequent visitor to this child, but she did not kiss him. Her first symptoms began fourteen days after the onset of symptoms in the little boy. Case No. 41 had been taken in its mother's arms when she went to inquire for the first case in this group, case No. 40, and may have been in the house several times, but there was no very intimate contact between them. She showed signs of the disease nine days after the onset of case No. 40. Case No. 57 was a girl of sixteen who had been taking care of her sister, No. 56, and had been sleeping with her throughout her illness. Her first symptoms were ten days after the onset of the first case in the family.

Evidence of Noncontagion.

Out of the whole number of cases there were but 2 that were isolated during their illness. One was in a family in which there were no other children and 1 was in a house in which there were three children, and this case was as thoroughly isolated as if it were a case of scarlet fever. The remaining 67 cases were not isolated in any degree, except that in a few instances the serious illness of the child was a sufficient bar to any intimate contact with the other children in the family.

Careful inquiry into the conditions that obtained during the illness of the 67 in which there was no isolation shows that there were 166 children in these families, 4 of which later had the disease; that there were 4 instances in which the sick child slept with a brother or sister up to the time of illness, 7 during the first few days of illness and 5 throughout the entire illness; that there were 9 instances in which the other children of the family drank from the same cup; that there were 12 instances in which the children in the family and neighbors' children kissed the sick child during the acute illness. It is impossible to determine the number of times that contact of the kind just mentioned occurred, but the above detail indicates to how great an extent the intimacy of the well with the sick did occur. Out of the entire number involved in the intimate contact just described 2 cases developed the disease.

Investigation further showed that there were, in addition to the 166 exposed children in the families, 86 children among neighbors and friends (making a total of 252 children) who were in intimate contact with the 67 cases. By intimate contact is meant (and this appeared to be almost universal) as free intercourse of the well and the sick as the patient's condition would permit. Playing with the child, sitting beside him and taking naps lying on the lounge or bed with him were the conditions that existed in almost every case. The total number of children that were more or less intimately exposed to the 67 cases is probably at least twice or three times the number of known exposures.

Diet.

Investigation of the diet showed the following: general diet, 58; cow's milk exclusively, 4; breast milk and cow's milk, 3; breast milk and fruit, etc., 4. Milk was found to be used in considerable quantities by 29 cases, in small amounts by 26, while 3 cases used no milk at all. Nineteen families produced their own milk, and there were twenty-two milkmen serving thirty-six families, while the milk for the remainder of the cases was brought from various sources. None of the infants under one year of age were fed upon breast milk alone.

Unusual Diet.

It was not found possible to get a more detailed history of the diet than is given above, except that in 6 cases it was especially mentioned that fruit and berries had been a very large item of diet. In the 2 infants, five and eight months old, bananas and berries were given as the diet in addition to breast milk. In 1 case the illness was attributed

to eating heartily of English mulberries, and in 3 cases to the eating of large amounts of blackberries and blueberries. In 39 instances it was stated that food supplies were bought from pedlers, and it was found that these carts frequently served the town and country districts in their localities.

Preceding Illness.

Practically all the cases had been in good health previous to this attack. One child was in very feeble health, 5 were in a more or less run-down condition and 63 were in their usual condition, or good health. (One had recovered two months before from a slight attack of scarlet fever.)

Conditions Immediately preceding Onset.

Traumatism. — There were 3 cases of traumatism as follows: fall from bicycle three weeks before illness; fall from piazza four weeks before illness; burn of arm and chest three weeks before illness. There were no special symptoms subsequent to the two falls, and the burn was healing properly when infantile paralysis developed.

Overheating. — Five cases gave a history of possible overheating within a day or two of the onset of the disease.

Fatigue. — Four cases were noted as suffering from marked fatigue within a day or two of this illness. One was a child of seven, who had been carrying bricks up a ladder the day before he was taken ill; another was a young man of eighteen who was a noted athlete; a third had been lifting very heavy weights, and a fourth was tired out with school work.

Swimming. — Five cases had been in swimming in the streams near by and 6 cases, among children, had been playing in the brooks, ponds, etc.

One child had a severe cold just before the symptoms of this disease appeared. It was noted in one case, in a young man of nineteen years old, that he had been extremely nervous and very much worried for fear he would develop this disease, as he had recently attended a funeral of a classmate who died from infantile paralysis.

Abortive Cases.[1]

There were 6 cases reported which on investigation were found to have the same acute symptoms as the other cases, but to a less degree, and no paralysis occurred. The history of these cases seemed to eliminate the possibility of their being simple gastro-intestinal disturbances; and while the diagnosis of infantile paralysis cannot be proven, the history

[1] This type of the disease is recognized and described by Wickman.

of the cases seemed to warrant their being considered as abortive cases of this disease. One case occurred in a family more than three weeks after the onset of a rather severe case in another brother. One case was coincident (doubtful history) with that of an older brother, while 4 cases occurred without known exposure.

Symptoms Accompanying Attack.

Pain, more or less marked, 62 cases; pain, little or none, 7 cases; fever, 63 cases; constipation, 47 cases; diarrhœa, 2 cases; nausea and vomiting, 43 cases; retraction of head, 35 cases; retention of urine, 23 cases; incontinence of urine, 1 case; brain symptoms, 13 cases; stiffness of neck, 6 cases; stiffness of spine, 7 cases.

Onset.

The onset in 65 cases was sudden and in 4 cases it was delayed, extending over several days.

Complicating Symptoms.

In 1 case a marked urticaria was an initial symptom; in 2 cases intense pain in the stomach was noted, also, as an initial symptom; in 5 cases a complicating tonsilitis was present; in 1 case a severe nose bleed took place; an extremely offensive breath was noted once; double vision occurred once as did also marked disturbance of speech. The early symptoms in 1 case were thought to be due to swollen glands, which had been present for a year, and in another case to a rheumatic condition. In 2 cases stumbling of the child while walking and playing was one of the first symptoms noted.

Diagnoses made.

In 1 case no diagnosis whatever was made; in 2 cases a diagnosis of typhoid fever was made, and the following diagnoses of single cases: digestive disturbance, heat stroke, cerebro-spinal meningitis, rheumatism.

Recovery.

Excluding the 6 abortive cases, 58 cases were examined in this regard about nine months after the illness. Six cases appeared to have completely recovered from the paralysis. Six others appeared to have recovered, but of these, 5 were infants and could not be satisfactorily examined, while the other was sick at the time of examination. These 6 cases were classed as apparent recovery. Forty-two cases had partially recovered from paralysis, while 4 cases had shown but very slight improvement since the attack.

Deaths.

There were 5 fatal cases, 1 of which made a partial recovery and died two months later of broncho-pneumonia. The length of the illness in days was as follows: female, eight months, 65 (broncho-pneumonia); male, three years, 6; female, four years, 4; female, fifteen years, 5; male, nineteen years, 6.

Age and Sex.

Forty-two were males and 27 were females. This epidemic was characterized by the number of cases in middle and late childhood and young adult life. It will be noticed that there were 6 cases over seventeen years of age, all in males. The following table shows the age and sex of each case: —

	Males.	Females.	Totals.
Under one year,	2	5	7
One year,	1	4	5
Two years,	5	4	9
Three years,	7	1	8
Four years,	5	3	8
Five years,	–	2	2
Six years,	2	1	3
Seven years,	5	1	6
Eight years,	2	–	2
Nine years,	1	1	2
Ten years,	1	1	2
Twelve years,	1	–	1
Thirteen years,	1	–	1
Fourteen years,	2	–	2
Fifteen years,	–	2	2
Sixteen years,	–	1	1
Seventeen years,	–	1	1
Eighteen years,	1	–	1
Nineteen years,	2	–	2
Twenty years,	1	–	1
Twenty-one years,	1	–	1
Twenty-two years,	1	–	1
Twenty-five years,	1	–	1
Totals,	42	27	69

Nativity.

The following data were obtained: —

Nativity.

	Massachusetts.	United States.	Foreign.	Not obtained.
Father,	29	41	14	14
Mother,	29	44	17	8

Number of Birth.

	1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.	10th.	11th.	Not obtained.
Cases, . . .	14	13	16	3	7	4	2	1	1	1	7

Interval of Time to Previous Confinement, in Years.

	1	2	3	4	5	6	7	10
Cases, ...	13	18	7	3	1	2	2	2

Distribution of Paralysis.

With the exception of the 6 abortive cases which showed no paralysis, the distribution of the paralysis was as follows: —

General,	3
Neck and back,	1
Right forearm,	1
Right arm,	4
Left arm,	2
Both arms and legs, neck and back,	1
Both arms, back, chest and throat,	1
Right arm and right leg,	3
Right arm and left leg,	2
Left arm and left leg,	2
Left arm, left thigh and leg,	1
Right arm, right thigh and leg,	1
Left arm and right upper arm,	1
Right leg,	2
Left leg,	2
Both legs,	11
Both legs and left arm,	2
Both legs, left arm and back,	1
Both legs and back,	1
Both legs, left arm and neck,	2
Both legs, neck and back,	1
Both legs and thighs,	8
Both legs, left face and left arm,	1
Left leg and thigh,	5
Right leg and thigh,	2
Right leg and thigh and left face,	2

School.

As the outbreak occurred in July and August there were no results that could be attributed to school influences and but 3 of the children attended school.

Weather.

A study of the plotted curves of temperature, rainfall (secured from the report of the Hatch Experiment Station at Amherst) and the number of cases appears to show no correlation whatever.

Local Conditions.

Investigation of the home conditions of each case shows that the sanitary conditions were found to be excellent in 4 cases, good in 17, fair in 31 and bad in 17.

Forty-one of the cases lived in detached houses, 17 in two-tenement and three in three-tenement houses, while but 8 lived in houses having four or more tenements.

The elevation of the dwelling was noted as high in 28 cases, as medium in 22 and low in 19.

Forty-two of the houses were considered to be dry, while 27 were noted as being in a more or less damp location. There were cellars in all of the houses, 42 of which were dry and 23 were damp, while 4 were found to be very damp or wet.

The water supply was given as spring water in 53, as the town supply in 14 and from wells in but 2 cases.

The sanitary arrangements in the houses showed that 23 houses had water-closets connected with the sewer and 46 had earth closets; that the sink water from 30 houses was carried into the sewer and in 39 cases it was disposed of in various ways on the land near by or in pipes to the nearest brook, pond, etc.

Screens were found to be used in 65 cases and not used in but 4 cases. Inquiry into the question of flies and mosquitoes showed that flies were said to be numerous in 28 instances, few in 39 and not present in 2; that mosquitoes were said to be numerous in 22 instances, few in 44 and not present in 2. No history of insect bites at the time of illness was obtained.

Summary.

We are dealing with groups of cases of an acute disease attacking children chiefly, but youth and adults frequently up to the age of twenty-five years, among the inhabitants of river valleys in sparsely settled com-

munities, occurring during the summer months of a hot, dry season. The persons attacked lived chiefly in detached houses, and but 8 lived in houses or blocks of more than three tenements. Although the cause of the disease is not known, it can undoubtedly be classed as infectious, as its distribution and incidence in localities are similar to those of other infectious diseases and strongly suggest a common cause.

Ninety per cent. of the persons attacked were in good health, and while a few instances of traumatism, overheating, fatigue and swimming were noted previous to the onset, the history of these cases does not seem to warrant the placing of much etiological responsibility upon these occurrences. They were not different from what might be found in the history of almost any groups of persons at this season.

With regard to the contagiousness of the disease the investigation of this group of cases suggests that the disease is but mildly contagious, to say the most. A large number of children were in intimate contact with those who were sick, and of these children an insignificant minority developed the disease. Although the group of cases investigated is a small one from which to draw generalizations, it must be remembered that the circumstances were particularly favorable to the investigation of points of contact between sick and well and of the detection of contagion.

The sanitary conditions under which most of the cases lived were not good. Dampness prevailed in many locations and most of the houses were very near water, but it must be remembered that the outbreak was in the valleys. Most of the houses had no sewer connection.

The marked digestive disturbances, which were early and notable symptoms, suggest the stomach as the port of entry for the infection. It does not seem possible in this outbreak to blame the varied sources of milk or water supply as carriers of the infection, unless it be considered that the cause of the disease may be present in all milk or in all water. That the cause may be connected with the food seems possible. It is important to note that none of the 7 infants under one year of age were fed exclusively upon breast milk.

The facts that all the cases living on the hill farms had been in the valley towns recently, where the infection may have occurred, and that many families purchased some of their food supplies from pedlers' carts, which act as the go-between between the town and the country, may be noteworthy.

It is not known what influences the dry season, with its low water and the proximity of many houses to water, contributes, but these facts appear to be significant.

Conclusions.

From an intimate acquaintance with all the facts and conditions of this outbreak we conclude that: —

1. Infantile paralysis is a disease produced by some external agent, — that is, it is an infectious disease.

2. It is mildly contagious at the most.

3. The harmful agent appears to enter the digestive tract in most instances.

4. Until the organism causing the disease is known, it will be impossible to say whether the infection is carried directly to the patient or by means of food.

VERMONT
MASSACHUSETTS

BOUNDARY LINE

JULY 24

VERMONT
MASSACHUSETTS

EAST BRANCH NORTH RIVER

LEYDEN

ROWE

DEERFIELD RIVER

HEATH

WEST BRANCH

COLERAINE

BERNARDSTON

JULY 23

AUG 24

JULY 4
AUG 7

JULY 29
AUG 23

COLERAINE

AUG. 11
Sept. 4

JULY 25
JULY 23

Bernardston

CONNECTICUT RIVER

NORTHFI

Heath

Sept 29

AUG 2
AUG. 12
AUG 27

AUG 24
JULY 19
JULY 11
JULY 18
JULY 1

GRISWOLDVILLE
JULY 20
JULY 27
AUG. 5
AUG 3

NORTH RIVER

JULY 7
JULY 25

SHATTUCKVILLE
JULY 16
JULY 17
JULY 16

TALLS RIVER

GILL

AUG 23
March
April

CHARLEMONT

DEERFIELD RIVER

JUNE 20
JUNE 27

JULY 29
AUG 23

JULY 25
JULY 20
AUG 29
JULY 25

Shelburne Falls
AUG 22
AUG 8
Sept. 23
Sept. 25

SHELBURNE

GREENFIELD

JUNE 17
JULY 5
JUNE 9
JUNE 13
JUNE 4
JULY 2
JULY 6
JULY 20

Turners Falls

AUG. 3
AUG 7
JULY 9

Greenfield

AUG 11

West Hawley

BUCKLAND

JULY 24

AUG 12

Shelburne

HAWLEY

Millers Falls

AUG 18
Nov. 6

Buckland
AUG. 15

AUG. 12

DEERFIELD

Sept 8

CONNECTICUT

MONTAGUE

PLAINFIELD

ASHFIELD

CONWAY

ANTERIOR
POLIOMYELITIS
1008

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WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS OF MORE THAN 10,000 POPULATION.

WEEK ENDING AUG. 7, 1909.

CITIES AND TOWNS.	Population,[1] Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	194	77	77	8	16	2	1	–
Worcester,	136,476	49	18	10	2	1	–	–	–
Fall River,	106,486	44	34	30	3	3	–	–	–
Cambridge,	102,112	21	8	9	3	2	–	–	–
Lowell,	96,380	37	16	9	1	2	1	–	–
New Bedford,	85,516	49	34	26	1	2	–	1	–
Lynn,	84,623	27	13	10	–	2	1	–	–
Springfield,	84,237	21	8	11	3	2	1	–	–
Lawrence,	78,000	29	21	22	1	3	–	–	2
Somerville,	76,049	16	7	6	1	1	–	–	–
Brockton,	55,039	9	3	4	–	2	–	–	–
Holyoke,	53,590	25	11	11	1	1	–	1	–
Malden,	41,941	8	2	1	–	–	–	–	–
Chelsea,	40,080	15	6	1	–	–	1	–	–
Newton,	39,642	6	–	1	–	1	–	–	–
Salem,	39,019	16	8	6	–	1	–	–	–
Haverhill,	38,362	14	6	5	1	2	–	–	–
Fitchburg,	34,263	11	7	3	2	1	–	–	–
Everett,	33,597	2	2	–	–	–	–	–	–
Quincy,	31,937	6	1	–	–	–	–	–	–
Taunton,	30,967	16	5	9	1	3	–	–	–
Waltham,	28,761	10	1	4	–	4	–	–	–
Pittsfield,	27,932	8	2	–	–	–	–	–	–
Brookline,	26,674	0	–	–	–	–	–	–	–
Gloucester,	26,011	10	4	–	–	–	–	–	–
North Adams,	22,150	6	5	2	–	–	–	–	–
Northampton,	21,075	3	–	–	–	–	–	–	–
Chicopee,	21,049	10	8	1	–	–	–	–	–
Medford,	20,921	3	–	–	–	–	–	–	–
Beverly,	16,386	6	4	3	–	–	–	–	–
Leominster,	16,030	8	5	4	–	–	–	–	–
Hyde Park,	15,609	3	1	–	–	–	–	–	–
Melrose,	15,459	2	0	–	–	–	–	–	–
Newburyport,	14,834	4	–	1	–	1	–	–	–
Revere,	14,820	7	4	1	1	–	–	–	–
Westfield,	14,750	6	4	–	–	–	–	–	–
Woburn,	14,522	1	1	–	–	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	5	2	2	–	–	–	–	–
Attleborough,	13,913	6	4	2	–	–	–	–	–
Adams,	13,685	4	–	–	–	–	–	–	–
Clinton,	13,105	3	–	1	–	1	–	–	–
Gardner,	13,066	2	0	–	–	–	–	–	–
Milford,	12,722	–	–	–	–	–	–	–	–
Watertown,	12,676	1	0	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	2	2	–	–	–	–	–	–
Weymouth,	11,798	2	0	–	–	–	–	–	–
Framingham,	11,749	3	2	1	1	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	3	1	–	–	–	–	–	–
Greenfield,	10,140	–	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,356,606	733	337	273	30	51	6	3	2

[1] The populations were estimated upon the rate of growth from 1900 to 1905. Those of Taunton, Gloucester, North Adams and Clinton were allowed to stand as in 1905, having shown no increase during the five-year period. The gain in the population of Lowell is due to the annexation of a part of the town of Tewksbury. The population of Lawrence by the census of 1905 was 70,050, but, owing to the building of the new Wood and Arlington mills, an increase of about 8,000 is estimated by the Lawrence board of health, or 78,000.

WEEK ENDING AUG. 14, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM — Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	221	89	92	16	19	–	1	–
Worcester,	136,476	50	16	16	2	4	–	–	–
Fall River,	106,486	54	32	38	–	2	–	1	–
Cambridge,	102,112	29	11	14	2	4	–	–	–
Lowell,	96,380	39	12	19	1	3	–	2	1
New Bedford,	85,516	46	31	25	2	–	–	–	–
Lynn,	84,623	22	9	8	–	2	–	–	–
Springfield,	84,237	34	14	13	1	2	1	1	–
Lawrence,	78,000	33	23	13	–	1	1	–	–
Somerville,	76,049	19	7	6	–	1	2	–	–
Brockton,	55,039	9	4	3	–	1	–	–	–
Holyoke,	53,590	21	13	12	1	2	–	–	–
Malden,	41,941	16	4	–	–	–	–	–	–
Chelsea,	40,080	12	5	1	1	–	–	–	–
Newton,	39,642	9	3	1	–	1	–	–	–
Salem,	39,019	16	9	–	–	–	–	–	–
Haverhill,	38,362	18	6	6	1	2	–	–	–
Fitchburg,	34,263	6	3	–	–	–	–	–	–
Everett,	33,597	7	1	–	–	–	–	–	–
Quincy,	31,937	7	4	1	–	1	–	–	–
Taunton,	30,967	13	5	9	2	1	–	–	–
Waltham,	28,761	5	0	1	–	1	–	–	–
Pittsfield,	27,932	9	2	5	1	–	–	1	–
Brookline,	26,674	3	–	–	–	–	–	–	–
Gloucester,	26,011	10	2	–	–	–	–	–	–
North Adams,	22,150	7	6	6	–	–	–	1	–
Northampton,	21,075	4	2	1	–	–	–	–	–
Chicopee,	21,049	9	5	2	–	–	–	–	–
Medford,	20,921	7	1	2	–	–	–	–	–
Beverly,	16,386	14	7	6	–	–	–	–	–
Leominster,	16,030	6	4	4	1	–	–	–	–
Hyde Park,	15,609	7	3	2	–	–	–	–	–
Melrose,	15,459	2	0	1	–	1	–	–	–
Newburyport,	14,834	4	2	1	–	–	–	–	–
Revere,	14,820	6	4	1	–	–	–	–	–
Westfield,	14,750	10	4	–	–	–	–	–	–
Woburn,	14,522	3	0	1	–	1	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	–	–	–	–	–	–	–	–
Attleborough,	13,913	3	1	2	–	1	–	–	–
Adams,	13,685	–	–	–	–	–	–	–	–
Clinton,	13,105	5	2	–	–	–	–	–	–
Gardner,	13,066	1	0	–	–	–	–	–	–
Milford,	12,722	3	1	1	1	–	–	–	–
Watertown,	12,676	3	1	2	–	1	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	2	2	–	–	–	–	–	–
Weymouth,	11,798	3	0	–	–	–	–	–	–
Framingham,	11,749	3	1	–	–	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	2	–	–	–	–	–	–	–
Greenfield,	10,140	1	–	1	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,351,327	813	349	316	32	51	4	7	1

WEEK ENDING AUG. 21, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM—					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever	Measles.
Boston,	624,491	223	102	105	4	20	1	2	2
Worcester,	136,476	34	18	4	1	1	–	–	–
Fall River,	106,486	44	32	24	2	2	–	–	–
Cambridge,	102,112	28	15	18	–	6	–	–	–
Lowell,	96,380	44	17	18	3	1	–	–	–
New Bedford,	85,516	34	23	24	2	3	1	–	–
Lynn,	84,623	26	13	5	–	1	–	–	–
Springfield,	84,237	17	10	6	3	–	–	–	–
Lawrence,	78,000	31	13	12	–	4	1	–	–
Somerville,	76,049	22	9	12	1	3	1	–	–
Brockton,	55,039	13	7	4	–	–	–	–	–
Holyoke,	53,590	28	18	19	2	2	–	–	–
Malden,	41,941	11	4	3	1	1	–	–	–
Chelsea,	40,080	15	2	–	–	–	–	–	–
Newton,	39,642	9	3	1	–	1	–	–	–
Salem,	39,019	15	10	1	–	–	1	–	–
Haverhill,	38,362	15	4	3	–	–	–	–	–
Fitchburg,	34,263	8	4	–	–	–	–	–	–
Everett,	33,597	10	2	3	–	3	–	–	–
Quincy,	31,937	4	3	–	–	–	–	–	–
Taunton,	30,967	12	4	7	–	–	–	–	1
Waltham,	28,761	9	2	2	–	2	–	–	–
Pittsfield,	27,932	6	2	–	–	–	–	–	–
Brookline,	26,674	6	–	1	–	1	–	–	–
Gloucester,	26,011	4	1	1	–	1	–	–	–
North Adams,	22,150	13	5	5	–	1	–	–	–
Northampton,	21,075	7	2	2	–	–	–	–	–
Chicopee,	21,049	15	5	2	–	1	–	–	–
Medford,	20,921	5	–	2	–	2	–	–	–
Beverly,	16,386	11	8	7	1	–	–	–	–
Leominster,	16,030	7	2	1	–	1	–	–	–
Hyde Park,	15,609	4	2	2	–	2	–	–	–
Melrose,	15,459	3	1	–	–	–	–	–	–
Newburyport,	14,834	4	2	1	1	–	–	–	–
Revere,	14,820	1	1	–	–	–	–	–	–
Westfield,	14,750	5	4	1	–	1	–	–	–
Woburn,	14,522	4	0	2	–	2	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	2	0	–	–	–	–	–	–
Attleborough,	13,913	2	–	1	–	–	–	–	–
Adams,	13,685	8	8	5	–	–	–	–	–
Clinton,	13,105	5	1	–	–	–	–	–	–
Gardner,	13,066	2	1	–	–	–	–	–	–
Milford,	12,722	1	0	–	–	–	–	–	–
Watertown,	12,676	4	3	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	4	1	1	–	1	–	–	–
Weymouth,	11,798	2	0	–	–	–	–	–	–
Framingham,	11,749	4	2	–	–	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	2	–	–	–	–	–	–	–
Greenfield,	10,140	3	–	–	–	–	–	–	–

Recapitulation.

Total of reporting towns,	2,379,468	786	366	306	21	63	5	2	3

WEEK ENDING AUG. 28, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	201	95	90	10	21	2	1	–
Worcester,	136,476	46	21	9	1	3	1	1	–
Fall River,	106,486	49	26	28	4	5	–	–	–
Cambridge,	102,112	25	14	11	2	2	–	–	–
Lowell,	96,380	41	22	13	1	3	1	–	–
New Bedford,	85,516	44	22	23	–	5	–	1	–
Lynn,	84,623	22	11	4	–	2	–	–	–
Springfield,	84,237	21	5	9	1	3	–	1	–
Lawrence,	78,000	32	14	7	1	1	1	3	–
Somerville,	76,049	26	4	6	–	2	–	–	–
Brockton,	55,039	14	9	5	–	1	–	–	–
Holyoke,	53,590	26	12	15	2	3	–	1	–
Malden,	41,941	14	6	2	–	–	–	–	–
Chelsea,	40,080	2	1	1	–	1	–	–	–
Newton,	39,642	10	1	–	–	–	–	–	–
Salem,	39,019	19	6	2	1	1	–	–	–
Haverhill,	38,362	12	6	3	–	1	1	–	–
Fitchburg,	34,263	8	5	–	–	–	–	–	–
Everett,	33,597	10	1	3	–	1	1	–	–
Quincy,	31,937	13	7	9	–	1	–	–	–
Taunton,	30,967	14	7	7	1	–	–	–	–
Waltham,	28,761	7	2	1	–	–	–	–	–
Pittsfield,	27,932	13	4	1	–	1	–	–	–
Brookline,	26,674	4	1	–	–	–	–	–	–
Gloucester,	26,011	10	2	–	–	–	–	–	–
North Adams,	22,150	6	1	2	–	–	–	–	–
Northampton,	21,075	4	1	–	–	–	–	–	–
Chicopee,	21,049	5	2	2	–	2	–	–	–
Medford,	20,921	4	3	2	–	–	–	–	–
Beverly,	16,386	4	3	4	1	–	–	–	–
Leominster,	16,030	4	2	1	–	1	–	–	–
Hyde Park,	15,609	5	3	–	–	–	–	–	–
Melrose,	15,459	5	2	1	–	–	–	1	–
Newburyport,	14,834	4	–	–	–	–	–	–	–
Revere,	14,820	3	1	–	–	–	–	–	–
Westfield,	14,750	9	4	1	–	1	–	–	–
Woburn,	14,522	6	3	–	–	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	2	2	–	–	–	–	–	–
Attleborough,	13,913	5	2	5	2	–	1	–	–
Adams,	13,685	7	7	5	–	–	5	–	–
Clinton,	13,105	1	–	1	–	–	1	–	–
Gardner,	13,066	6	3	2	–	1	–	–	–
Milford,	12,722	2	1	–	–	–	–	–	–
Watertown,	12,676	7	3	1	–	1	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	4	2	2	–	–	–	1	–
Weymouth,	11,798	7	3	2	–	1	–	–	–
Framingham,	11,749	5	1	1	–	1	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	4	–	1	–	–	–	–	–
Greenfield,	10,140	0	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,379,468	792	353	282	27	65	14	10	–

WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.

DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF AUG. 7, 14, 21 AND 28, 1909.

DISEASE.	Place.	Week ending—			
		Aug. 7.	Aug. 14.	Aug. 21.	Aug 28.
Cerebro-spinal meningitis,	Boston,	3	2	1	1
	Cambridge,	–	–	2	–
	Haverhill,	–	1	–	–
	Lawrence,	1	–	–	–
	New Bedford,	–	1	–	–
	Newburyport,	–	1	–	–
	Taunton,	–	–	–	6
	Worcester,	1	–	–	–
Scarlet fever,	Lawrence,	–	–	–	1
	Lowell,	–	–	3	–
	New Bedford,	–	–	–	1
	Springfield,	–	–	1	2
	Waltham,	–	–	–	1
Whooping cough,	Adams,	–	–	1	–
	Boston,	–	–	1	1
	Haverhill,	–	–	1	–
	Lynn,	1	–	–	–
	North Adams,	–	1	–	–
	Taunton,	–	1	–	–
	Worcester,	–	–	–	2
Erysipelas,	Boston,	1	–	1	–
	Lowell,	–	–	–	1
Tuberculosis other than pulmonary.	Arlington,	–	–	–	1
	Boston,	3	3	6	3
	Cambridge,	–	–	2	1
	Chelsea,	–	–	–	1
	Fall River,	–	1	–	–
	Greenfield,	–	1	–	–
	Haverhill,	–	–	1	–
	Holyoke,	1	–	–	1
	Medford,	–	1	–	–
	North Adams,	–	–	1	–
	Pittsfield,	–	1	–	–
	Quincy,	–	–	–	1
	Somerville,	–	–	–	1
	Springfield,	1	2	–	–
Meningitis other than cerebro-spinal.	Leominster,	1	–	–	–
	Lynn,	1	2	–	1
	Medford,	–	–	–	1
Tetanus,	Leominster,	–	1	–	–

WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

CASES OF INFECTIOUS DISEASES REPORTED DURING THE WEEKS OF AUG. 7, 14, 21 AND 28, 1909.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	WEEK ENDING —			
	Aug. 7.	Aug. 14.	Aug. 21.	Aug. 28.
Diphtheria,	83	89	91	100
Measles,	94	38	45	32
Scarlet fever,	71	59	86	79
Typhoid fever,	46	61	82	85
Tuberculosis, pulmonary,	156	146	128	152
Cerebro-spinal meningitis,	1	7	1	5
Whooping cough,	21	31	21	14
Varicella,	6	4	7	3
Erysipelas,	1	–	–	–
Mumps,	1	–	–	1
Ophthalmia neonatorum,	3	3	2	7
Tuberculosis other than pulmonary,	–	1	–	1
Meningitis other than cerebro-spinal,	–	1	–	1
Tetanus,	1	–	–	–
Trachoma,	–	–	–	1

MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of August, 1909: —

ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Butter,	3	–	3	Meat products: —			
Canned fruit and vegetables,	3	–	3	Canned meats,	5	–	5
Cheese,	1	–	1	Hamburg steak,	1	–	1
Cider,	1	–	1	Lambs' tongues,	1	–	1
Clams,	1	–	1	Milk,	271	144	415
Cocoa,	1	–	1	Mince meat,	1	–	1
Condensed milk,	3	–	3	Pressed meat,	1	–	1
Confectionery,	1	–	1	Sausages,	8	–	8
Cream,	8	–	8	Tripe,	3	–	3
Drugs,	79	13	92	Sundries,	3	1	4
Flavoring extracts: —				Non-alcoholic drinks,	3	–	3
Lemon,	2	–	2	Olive oil,	8	1	9
Vanilla,	4	–	4	Pickles,	2	2	4
Grape juice,	1	–	1	Syrups,	1	1	2
Jams and jellies,	2	–	2	Table sauces,	1	–	1
Malt liquors,	2	–	2	Vinegar,	3	–	3
Maple syrup,	1	–	1	Total,	425	162	587

The samples of drugs found to be adulterated were alcohol, borax, tincture of ginger and lime water.

The cities and towns in which samples were collected were: Beverly, Boston, Brookline, Cambridge, Chelsea, Concord, Dalton, Dedham, Fall River, Franklin, Gloucester, Great Barrington, Haverhill, Holbrook, Hudson, Hull, Hyde Park, Lawrence, Lee, Lexington, Lowell, Lynn, Marlborough, Milford, New Bedford, North Adams, North Attleborough, North Andover, Norwood, Pittsfield, Provincetown, Reading, Rockport, Salem, Stoneham, Taunton, Topsfield, Truro, Walpole, Waltham, Westborough, Wilmington, Williamstown, Winchester, Woburn and Worcester.

PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING TO FOOD AND DRUGS.

Thirty-three convictions were secured during the month of August, 1909, for selling adulterated food and drugs, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	George L. Sharpnor,	North Andover,	Cider.
2	John A. Burgner,	Dalton,	Milk (total solids, 9.45).[1]
3	John A. Burgner,	Dalton,	Milk (total solids, 11.87).[2]
4	Joseph A. Butler,	Gloucester,	Milk (total solids, 11.60).
5	Thomas Connelley,	Gloucester,	Milk (total solids, 7.72).[1,3]
6	Thomas Connelley,	Gloucester,	Milk (total solids, 7.72).[3]
7	David S. Clarke,	Topsfield,	Milk (total solids, 10.64).[2]
8	David S. Clarke,	Topsfield,	Milk (total solids, 10.80).
9	Alexander Francis,	Truro,	Milk (total solids, 11.44).[1]
10	Alexander Francis,	Truro,	Milk (total solids, 11.44).
11	Albert H. Friend,	Gloucester,	Milk (total solids, 7 80).[4]
12	Albert H. Friend,	Gloucester,	Milk (total solids, 7.80).[5]
13	Robert Hargrove,	Woburn,	Milk (total solids, 12.25).[1]
14	Isaiah R. Kimball (H. P. Hood & Son),	Lawrence,	Milk (total solids, 11.92).
15	Isaac Knudson,	Gloucester,	Milk (total solids, 11.34).
16	Joseph Loehr,	Pittsfield,	Milk (total solids, 11.62).
17	Frank Loehr,	Washington,	Milk (total solids, 10.46).[1]
18	Chas. R. Luther,	Sutton,	Milk (total solids, 11.74).[1]
19	Harry C. Lyons,	Bradford,	Milk (total solids, 8.82).
20	Harry C. Lyons,	Bradford,	Milk (total solids, 8 82).[1]
21	North Shore Dairy Association,	Gloucester,	Milk (total solids, 9.20).[1,3]
22	North Shore Dairy Association,	Gloucester,	Milk (total solids, 11).[3]
23	North Shore Dairy Association,	Gloucester,	Milk (total solids, 11.80).[1]
24	Willard O. Putnam,	North Andover,	Milk (total solids, 9.34).[1]
25	Willard O. Putnam,	North Andover,	Milk (total solids, 11 24).
26	Willard O. Putnam,	North Andover,	Milk (total solids, 11.24).
27	Edgar A. Sargent,	Sutton,	Milk (total solids, 10.46).[1]
28	Michael S. Tavitian,	Haverhill,	Milk (total solids, 8.82).[1]
29	Michael S. Tavitian,	Haverhill,	Milk (total solids, 11.06).
30	Henry H. Wehry,	Dalton,	Milk (total solids, 11.16).[2]
31	Willis E. Wheeler,	Northborough,	Milk (total solids, 11.42).
32	Geo. L. Damphenee,	Millis,	Tincture of iodine.
33	Geo. L. Damphenee,	Millis,	Tincture of iodine.

[1] Watered. [2] Skimmed. [3] Appealed. [4] Second offence. [5] Contained analine orange (coloring).

Fines imposed, $971.

LIST OF ADULTERATED OR IMPROPERLY LABELED FOODS, ETC., FOR AUGUST, 1909.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
2108 N	Pickles,	Lutz & Schramm Company, Allegheny, Pa.,	Contained alum.
2190 N	Pickles,	Skilton, Foote & Co., Boston, Mass.,	Contained alum.
1175 R	Crescent Brand borax,	Charles L. Hirsh & Co., New York,	Consists of sodium bicarbonate.
2187 N	Spirit of camphor,	Charles H. Dexter, Boston, Mass.,	78 per cent. of required strength.
2172 N	Spirit of camphor,	Dr. J. B. Cherry & Co., Boston, Mass.,	80 per cent. of required strength.
2170 N	Spirit of camphor,	Hollis Street Pharmacy, Boston, Mass.,	42 per cent. of required strength.
867 R	Milk,	Joseph Loehr, Pittsfield, Mass.,	Total solids, 10.90 per cent.; fat, 3.00 per cent.; contained added water.
869 R	Milk,	Joseph Loehr, Pittsfield, Mass.,	Total solids, 11.34 per cent.; fat, 3.90 per cent.; contained added water.
1996 N	Milk,	John Parker, Raynham, Mass.,	Total solids, 11.06 per cent.; fat, 3.65 per cent.; contained added water.
10134	Milk,	James P. McNiff Marlborough, Mass..	Total solids, 11.16 per cent.; fat, 3.00 per cent.; contained added water.
915 R	Milk,	James Breen, Concord, Mass.,	Total solids, 9.54 per cent.; fat, 2.60 per cent.; contained added water.
919 R	Milk,	James Breen, Concord, Mass.,	Total solids, 10.00 per cent.; fat, 3.00 per cent.; contained added water.
q 3411	Milk,	North Shore Dairy Association, Gloucester, Mass.,	Total solids, 9.20 per cent.; fat, 1.80 per cent.; contained added water.
q 3412	Milk,	North Shore Dairy Association, Gloucester, Mass.,	Total solids, 11.00 per cent.; fat, 3.30 per cent.; contained added water.
q 3413	Milk,	North Shore Dairy Association, Gloucester, Mass.,	Total solids, 11.00 per cent.; fat, 3.30 per cent.; contained added water.
2034 N	Milk,	North Shore Dairy Association, Gloucester, Mass.,	Total solids, 11.80 per cent.; fat, 4.30 per cent.; contained added water.
q 3416	Milk,	Gloucester Dairy Company, Gloucester, Mass.,	Total solids, 11.12 per cent.; fat, 3.30 per cent.; contained added water.
2022 N	Milk,	Albert H. Friend, Gloucester, Mass.,	Total solids, 7.80 per cent.; fat, 2.55 per cent.; contained added water, colored with an orange dye
943 R	Milk,	Hubert H. Hall, Great Barrington, Mass.,	Total solids, 10.26 per cent.; fat, 3.20 per cent.; contained added water.
999 R	Milk,	Hubert H. Hall, Great Barrington, Mass.,	Total solids, 8.94 per cent.; fat, 2.35 per cent.; contained added water.

933 R 935 R	Milk, ...	Oscar M. Hall, Great Barrington, Mass., . . .	Total solids, 11.12 per cent.; fat, 4.50 per cent.; contained added water. Total solids, 11.34 per cent.; fat, 3.40 per cent.; contained added water.
1017 R 1019 R	Milk, ...	Leonard Hammer, Monterey, Mass., ...	Total solids, 12.00 per cent.; fat, 4.00 per cent.; contained added water. Total solids, 11.00 per cent.; fat, 3.90 per cent.; contained added water.
10167	Milk, ...	Alexander A. Francis, Truro, Mass., ...	Total solids, 11.44 per cent.; fat, 3.90 per cent.; contained added water.
1035 R	Milk, ...	Frank Chandler, Medford, Mass., ...	Total solids, 10.62 per cent.; fat, 2.75 per cent.; contained added water.
1079 R 1081 R	Milk, ...	Robert Hargrove, Woburn, Mass., ...	Total solids, 12.25 per cent.; fat, 4.00 per cent.; contained added water. Total solids, 12.14 per cent.; fat, 4.15 per cent.; contained added water.
1179 R	Milk, ...	Adolphe Bonchard, Dracut, Mass., ...	Total solids, 11.50 per cent.; fat, 3.40 per cent.; contained added water.
10236 10237	Milk, . . .	Frank J. Rooney, Marlborough, Mass., . . .	Total solids, 12.08 per cent.; fat, 3.70 per cent.; contained added water. Total solids, 12.02 per cent.; fat, 3.80 per cent.; contained added water.
10252	Milk, ...	Thomas J. McDonough, Hyde Park, Mass., . . .	Total solids, 11 03 per cent.; fat, 3.35 per cent.; contained added water.

INSPECTION OF DAIRIES.

During the month of August, 1909, 147 dairies were examined in the following places: —

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number to which Letters were sent.	Per Cent.
Acton,	–	–	–	–	–
Fourth inspection,	2	–	–	2	100.00
Beverly,	–	–	–	–	–
Third inspection,	1	1	100.00	–	–
Chilmark,	1	1	100.00	–	–
Dalton,	1	1	100.00	–	–
Second inspection,	1	–	–	1	100.00
Eastham,	1	1	100.00	–	–
Edgartown,	8	6	75.00	2	25.00
Hinsdale,	6	–	–	6	100.00
Nantucket,	40	10	25.00	30	75.00
Oak Bluffs,	6	2	33.33	4	66.67
Orleans,	1	–	–	1	100.00
Pittsfield,	12	–	–	12	100.00
Second inspection,	10	2	20.00	8	80.00
Provincetown,	10	2	20.00	8	80.00
Richmond,	7	–	–	7	100.00
Sandwich,	20	10	50.00	10	50.00
Tisbury,	4	4	100.00	–	–
Truro,	15	9	60.00	6	40.00
Washington,	1	1	100.00	–	–

Total number of dairies examined,	147
Number found to be free from objectionable conditions,	50
Number to which letters were sent,	97
Total number of conditions to which attention was called,	263
Percentage of dairies which passed inspection,	34.01

The names of the owners of dairies found to be worthy of commendation follow: —

Beverly.

Cherry Hill Farm [1]

Chilmark.

Colcord, J. H. J.

Dalton.

Crane, Frederick E.

Eastham.

Knowles, S. D.

[1] Third inspection.

Edgartown.

Cleveland, Asa L.
Cleveland, H. J.
Norton, Allen R.
Norton, Clement
Vincent, John P.
Vincent, W. G.

Nantucket.

Cabot, Channing
Crosby, (Miss) Mary E.
Gardner, John C.
Gardner, Wallace
Gordon, Harry
Lewis, S. L., Jr.
Morris, Charles C.
Pitman, C. H.
Roberts, David
Thurston, Charles W.

Oak Bluffs.

Chase, F. W.
Smith, George

Pittsfield.

Gale, A. D.*†
Osteyee, H. B.*†

Provincetown.

King, John I.
Smith, J. S.

Sandwich.

Armstrong, R. F.
Blake, C. H.
Fish, George
Holway, F. R.
Howland, E. R.
Howland, Frank
Parker, George
Smith, William
Tobey, Frank
Tulas, Herman

Tisbury.

Look, Orin
Norton, Ernest
West, E. M.
Whiting, J.

Truro.

Cabrall, Joseph
Francis, A. A.
Francis, J. S.
Grozier, Frank
Perry, John
Rogers, Antone
Small, E. L.
Small, Warren W.
Small, W. M.

Washington.

Loehr, Frank

THE HARMFUL EFFECTS OF ACETANILID, ANTIPYRIN AND PHENACETIN.[1]

One of the most interesting and, for physicians, most instructive bulletins published by the Bureau of Chemistry at Washington has recently been issued on "The Harmful Effects of Acetanilid, Antipyrin and Phenacetin," by Dr. L. F. Kebler, with the collaboration of Drs.

* Second inspection. † Reported favorably on first inspection.

[1] Editorial, Journal American Medical Association, July 24, 1909.

F. P. Morgan and Philip Rupp. For some time "The Journal" and a few other medical journals have been warning physicians of the dangers of the indiscriminate use of these valuable drugs; likewise a few of the better lay journals, among which "Collier's" and the "Ladies' Home Journal" take first rank, have carried the same warning to the public. The authors of this bulletin say, regarding the *raison d'être* of the investigation made by the government on this subject: "The purpose of the inquiry was not to depreciate in any way the value of these substances as medicinal agents, but rather to furnish information to the public which would enable them to understand that these remedies should be employed with caution in the absence of reliable medical advice. . . ." And further: "The harm done by acetanilid does not result from its proper use under the direction of the physician, but is mainly the result of the promiscuous and indiscriminate use of the product by the laity."

With regard to the habit-producing qualities of acetanilid, antipyrin and acetphenetidin (phenacetin), the bulletin states that "the habit is acquired in most instances through the use of the remedy, without the supervision of the physician, for the relief of the minor aches and pains, especially headache." This fact was further emphasized by the statistics collected, which showed that "proprietary preparations were used in at least 50, or 44.6 per cent., of the 112 instances of the habitual use of acetanilid." As to the toxic qualities of acetanilid the following is instructive: of the total number of cases of poisoning recorded, "more than one-third were reported during the year and a half following the advent of acetanilid as a medicinal agent in August, 1886. . . ." These cases were, doubtless, nearly all due to physicians' lack of knowledge regarding the toxic properties of what was then a new drug. As physicians learned of the danger, "the number of cases of poisoning fell off rapidly, and during the thirteen years following 1891 the number averaged but 6 annually."

Then came the innings of the nostrum exploiter, and "headache cures," "brain foods" and fake synthetic analgesics flooded the market and were indiscriminately used by the public. The result was a large number of cases of poisoning reported during this later period — since 1904. The "notable increase," both in the number of cases and in the number of deaths, is accounted for by the government investigators as follows: "This can be adequately explained by the fact that during recent years the control of acetanilid as a remedial agent has rapidly passed from the hands of the medical profession to those of the laity, owing largely to the advertising efforts of the manufacturers of proprietary medicines." The use of nostrums containing acetanilid has

increased enormously during the past few years. We read, in fact, that, while proprietary preparations containing acetanilid are not mentioned in the reports from 1897 to 1904, inclusive, yet in 1905 proprietaries were responsible for 55.5 per cent. of the cases of poisoning reported, in 1906 for 63.1 per cent., and in 1907 for no fewer than 87.5 per cent. "The Journal" has been accused of being too severe on the "headache powders" and similar preparations; this, too, not only by the proprietary interests, but occasionally by its friends. Certain it is that "The Journal" has never made such a scathing arraignment as that of this government document. . . .

THE COMMERCIAL PASTEURIZATION OF MILK.[1]

By B. R. Rickards,[2] Columbus, O.

Abstract.

The pasteurization of milk is a subject which has received its due share of attention in the last few years. As a very natural sequence to the epidemic traced to milk, and also due in part, no doubt, to the establishment of bacterial milk standards by health boards, we find an increasing tendency on the part of the milk producers and milk contractors or handlers toward the pasteurization of their product.

Three of our large contracting milk firms were in 1908 pasteurizing a large proportion of their milk, two pasteurizing practically all of their bottle trade, a third pasteurizing all his milk except that sold to milk peddlers.

Each of the three different firms pasteurizing milk for the Boston trade use a different make of machine, each machine being radically different from the others.

At least four visits were made to each concern for the purpose of taking samples. On each trip an average of 20 samples were taken, 10 as the milk went into the machines and 10 as it came from the cooling apparatus, the time limit between the taking of the two sets of samples being adjusted as closely as was possible to the time necessary for the milk to pass through the apparatus, so that the same lot of milk, practically speaking, was tested before and after the process.

[1] Read before the American Public Health Association at Winnipeg, August, 1908. The collection of specimens and the laboratory work on which this paper is based was by W. M. Campbell, milk bacteriologist. Reprinted from the American Journal of Public Hygiene for August, 1909.

[2] Written while director of the Boston board of health laboratory.

Table No. 1.

Firm.	No. of Samples taken.	Milk exposed to Air during —	Temperature (Degrees F.).			Time exposed to Heat.
			Before.	During.	After.	
X, . . .	36	Entire process.	38–50	154–160	43–48	Estimated 3 min.
Y, . . .	40	Cooling only.	47–54	140–148	48–50	20 min.
Z, . . .	50	Cooling only.	52–58	158–165	46–52	Estimated 3–5 min.

It will be seen that the machines in which the milk is exposed to heat for a short period of time are heated to a higher temperature than the one which holds the milk for twenty minutes.

According to Rosenau[1] 140° F. for two minutes is sufficient to kill the diphtheria, typhoid and dysentery organisms, but at least twenty minutes at 140° F. are necessary to kill the bacilli of tuberculosis. A momentary exposure at 160° will, however, kill the latter.

It is evident, then, that as far as the organisms mentioned are concerned, with the possible exception of *B. tuberculosis,* the processes as ordinarily carried on are sufficient to kill, and we may safely infer that the infecting material from other diseases, such as scarlet fever, would also succumb. While the control of the temperature is left to human hands, however, there is likelihood of the temperature falling low enough at times to fail to kill and even acting to multiply the organisms. One instance of this will be noted later. In addition, one must bear in mind the possibility of infection of milk by handling subsequent to pasteurization.

Out of 125 samples taken at different times, only 22 samples, or 18 per cent., were below the limit of 500,000 bacteria per cubic centimeter. The average count of each dealer was above this limit. As samples were taken at different periods between the first of March and the middle of June, 1908, some allowance may be made for the extremely hot weather during the latter part of that time. It is, nevertheless, apparent that a certain proportion of the milk going into certain of the machines was of higher bacterial content than should be allowed to be pasteurized.

[1] Bulletin 42. Hygienic Laboratory, U. S. P. H. and M. H. S., p. 82.

Table No. 2. — Effect of Pasteurization.

[Based on all first day counts.]

Contractor.	Total.	Average Count before Pasteurization.	Average Count after Pasteurization.	Per Cent. Efficiency.
X, ...	27 [1]	688,000	15,000	97.7
Y, ...	39	881,000	9,750	98.9
Z, ...	50	3,576,000	273,000	92.4

[1] In one set of experiments this pasteurizer was evidently not being run successfully, the pasteurizer acting not as such but as an incubator. For the sake of comparison this set of nine tests is omitted from the above table and given below: —

Before pasteurizing, 716,000; after pasteurizing, 2,196,000; increase, 30 per cent. (approx.).

The above table shows the amount of and percentage reduction by pasteurization in the number of bacteria contained in the milk. In a milk previously of high bacterial content, we have, after pasteurization, all the dead and disintegrating bodies of the bacteria, all the bacterial products previously formed in the milk and to some extent probably unchanged by the heating, plus in some cases an amount of cooked dung and dirt varying with the original condition of the sample. By the reduction of the number of bacteria through the heating process, the criterion by which we now judge a dirty, old or improperly kept milk is temporarily lost. It is undoubtedly true that what organisms are left multiply with greater rapidity than before in the pasteurized milk, as shown in the following table: —

Table No. 3. — Showing Relative Increase in Bacteria in Pasteurized and Unpasteurized Milk at Ice Box Temperature.

[87 samples (based on those samples on which a twenty-four hour count was obtained.)]

	Unpasteurized Milk, Average Count.	Pasteurized Milk, Average Count.
First day, ...	1,087,000	44,000
After twenty-four hours in ice chest, .	22,617,000	3,691,000
Per cent. increase, ...	2,100	8,400
Ratio, ...	1	4

In other words, on the average, bacteria will increase four times as fast in pasteurized milk as in unpasteurized milk when kept twenty-four hours at the temperature of the ice box. This figure coincides

almost exactly with that obtained by St. John and Pennington in Philadelphia.[1]

Pasteurized milk seems to keep longer, but eventually acquires a strong odor and really may be said to decompose rather than sour. In nearly every instance we found that the pasteurized milk, though heavily loaded with bacteria, did not decompose until after the unpasteurized milk taken at the same time had curdled. That such milk is unfit for food — especially for babies — goes without saying.

Effect of Pasteurization on the Bacterial Analysis of Milk.

In addition to the fact that we are obliged to pass dirty milk recently pasteurized because of its low count, we have found during this investigation that pasteurization affects our results in two other ways. In the direct microscopic examination of the milk sediment we have been able, by means of Dr. Slack's method, to make a close estimation of the number of bacteria present, thus "passing" such samples as were evidently below the limit of 500,000 bacteria per cubic centimeter. At the same time samples showing streptococci, increased leucocytes or pus were detected. In pasteurized milk the leucocyte estimate is much larger on account of the greater precipitation of cells in milk that has been heated, this result confirming the results reported by Russell last year before the Laboratory Section of the American Public Health Association. We have also noticed a higher bacterial estimate as compared with plate counts from the heated milk. This is probably due to such milk containing a large number of dead bacteria or bacteria so affected by heat as to be incapable of reproduction.

Summary.

1. A large amount of milk is pasteurized in Boston every day. Some of the milk of one contractor is pasteurized in the country and is again pasteurized here.
2. The amount of milk pasteurized is probably increasing.
3. Some of this milk is of very high bacterial content.
4. Bacteria will increase much faster in pasteurized than in unpasteurized milk.
5. The pasteurization of milk affects the microscopic estimate of bacteria and leucocytes.

---

[1] St. John and Pennington, Journal Infectious Diseases, Vol. 4, p. 647.

Conclusions.

1. Commercial pasteurization of milk *without restriction* puts a premium on dirty milk, since dirty and old milk, otherwise unsalable, can then be put on the market.

2. Pasteurized milk may well mean cooked dirt, cooked dung and cooked bacterial products, and the laboratory is powerless to detect it, unless apparent to the naked eye.

3. The commercial pasteurization as at present practiced in Boston probably would destroy all disease-producing organisms, with the possible exception of the bacilli of tuberculosis. The latter would probably be killed in the majority of instances. One machine only out of the three tested would be likely always to destroy the latter. The toxins produced by these and by the putrefactive organisms in dirty milk would undoubtedly escape unharmed, and in many cases be capable of producing severe intestinal disturbances — especially in babies.

4. A false sense of security is undoubtedly conveyed by the term pasteurized milk. The lack of security may come from either improper pasteurization, the pasteurization of improperly handled milk or improper care of pasteurized milk.

5. The unrestricted pasteurization of improperly kept, old or dirty milk should be prevented by regulations or ordinances prohibiting the pasteurization of milk containing over a certain specified number of bacteria per cubic centimeter, the bacterial limit being set with due regard to local conditions, especially the distance from which the milk comes. Such regulation should, of course, be coupled with a regulation forbidding the sale of milk above the bacterial limit established.

6. The law should require that milk heated above 140° F.[1] should be marked heated or pasteurized milk. Pasteurized milk should not be sold as fresh milk.

The pasteurization of milk in itself is probably not a harmful process, and is, perhaps, to a certain extent, a necessity under modern conditions in large cities, but *commercial* pasteurization should be carried on only under the most stringent supervision.

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[1] The Massachusetts Legislature of 1908 passed an act requiring the labeling of all milk heated above 167° F. as "heated milk." The law as it stands is useless.

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WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS OF MORE THAN 10,000 POPULATION.

WEEK ENDING SEPT. 4, 1909.

CITIES AND TOWNS.	Population.[1] Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM — Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	185	68	77	12	17	1	1	–
Worcester,	136,476	37	10	7	1	–	1	1	–
Fall River,	106,486	48	28	22	3	3	–	3	–
Cambridge,	102,112	32	8	17	3	7	–	–	–
Lowell,	96,380	39	19	9	1	3	–	1	–
New Bedford,	85,516	35	23	20	5	–	–	–	–
Lynn,	84,623	21	9	2	–	1	–	–	–
Springfield,	84,237	15	6	7	–	3	1	–	–
Lawrence,	78,000	34	20	14	–	–	–	–	–
Somerville,	76,049	9	3	4	–	1	1	–	–
Brockton,	55,039	8	3	1	–	–	–	–	–
Holyoke,	53,590	21	8	7	2	–	–	1	–
Malden,	41,941	7	–	2	–	2	–	–	–
Chelsea,	40,080	10	4	–	–	–	–	–	–
Newton,	39,642	6	3	–	–	–	–	–	–
Salem,	39,019	15	8	1	–	1	–	–	–
Haverhill,	38,362	15	6	5	–	–	–	1	–
Fitchburg,	34,263	–	–	–	–	–	–	–	–
Everett,	33,597	3	–	1	–	1	–	–	–
Quincy,	31,937	7	3	1	–	–	–	–	–
Taunton,	30,967	22	11	10	1	–	–	1	–
Waltham,	28,761	5	–	–	–	–	–	–	–
Pittsfield,	27,932	4	2	–	–	–	–	–	–
Brookline,	26,674	5	1	–	–	–	–	–	–
Gloucester,	26,011	–	–	–	–	–	–	–	–
North Adams,	22,150	8	3	2	1	–	–	–	–
Northampton,	21,075	3	1	1	–	–	–	–	–
Chicopee,	21,049	7	4	–	–	–	–	–	–
Medford,	20,921	3	1	–	–	–	–	–	–
Beverly,	16,386	11	3	8	–	–	–	–	–
Leominster,	16,030	7	4	1	–	–	–	–	–
Hyde Park,	15,609	2	1	–	–	–	–	–	–
Melrose,	15,459	6	0	1	–	–	–	1	–
Newburyport,	14,834	6	2	2	–	1	–	–	–
Revere,	14,820	4	4	–	–	–	–	–	–
Westfield,	14,750	3	2	1	–	1	–	–	–
Woburn,	14,522	2	1	1	–	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	3	3	3	–	–	–	–	–
Attleborough,	13,913	4	2	2	–	–	–	–	–
Adams,	13,685	3	3	1	–	–	–	–	–
Clinton,	13,105	–	–	–	–	–	–	–	–
Gardner,	13,066	3	1	1	–	1	–	–	–
Milford,	12,722	6	1	–	–	–	–	–	–
Watertown,	12,676	1	–	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	6	4	4	–	1	–	–	–
Weymouth,	11,798	3	1	–	–	–	–	–	–
Framingham,	11,749	3	1	–	–	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	3	1	1	–	1	–	–	–
Greenfield,	10,140	3	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,306,089	683	286	236	29	44	4	10	–

[1] The populations were estimated upon the rate of growth from 1900 to 1905. Those of Taunton, Gloucester, North Adams and Clinton were allowed to stand as in 1905, having shown no increase during the five-year period. The gain in the population of Lowell is due to the annexation of a part of the town of Tewksbury. The population of Lawrence by the census of 1905 was 70,050, but, owing to the building of the new Wood and Arlington mills, an increase of about 8,000 is estimated by the Lawrence Board of Health, or 78,000.

WEEK ENDING SEPT. 11, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	196	81	81	6	19	2	3	-
Worcester,	136,476	36	12	12	4	1	-	2	-
Fall River,	106,486	47	33	25	2	-	-	1	-
Cambridge,	102,112	32	9	9	2	2	-	-	-
Lowell,	96,380	46	28	13	3	2	-	-	-
New Bedford,	85,516	27	17	11	2	3	-	-	-
Lynn,	84,623	22	8	6	3	3	-	-	-
Springfield,	84,237	12	5	2	-	2	-	-	-
Lawrence,	78,000	34	16	11	2	-	1	-	-
Somerville,	76,049	8	1	2	-	2	-	-	-
Brockton,	55,039	8	6	4	-	-	-	-	-
Holyoke,	53,590	16	7	7	1	-	-	-	-
Malden,	41,941	8	1	-	-	-	-	-	-
Chelsea,	40,080	11	4	3	-	1	1	1	-
Newton,	39,642	8	3	1	-	1	-	-	-
Salem,	39,019	12	4	1	1	-	-	-	-
Haverhill,	38,362	8	5	6	1	-	-	-	-
Fitchburg,	34,263	17	11	4	3	1	-	-	-
Everett,	33,597	10	7	2	-	1	-	-	-
Quincy,	31,937	9	5	1	1	-	-	-	-
Taunton,	30,967	25	7	13	-	3	-	1	-
Waltham,	28,761	7	1	-	-	-	-	-	-
Pittsfield,	27,932	15	9	2	-	2	-	-	-
Brookline,	26,674	3	-	-	-	-	-	-	-
Gloucester,	26,011	4	2	-	-	-	-	-	-
North Adams,	22,150	3	1	1	-	-	-	-	-
Northampton,	21,075	7	2	1	-	-	-	-	-
Chicopee,	21,049	7	-	-	-	-	-	-	-
Medford,	20,921	6	2	3	2	-	-	-	-
Beverly,	16,386	6	2	2	-	1	-	-	-
Leominster,	16,030	3	1	-	-	-	-	-	-
Hyde Park,	15,609	6	5	5	1	-	-	-	-
Melrose,	15,459	4	2	-	-	-	-	-	-
Newburyport,	14,834	10	2	2	1	-	-	-	-
Revere,	14,820	3	-	-	-	-	-	-	-
Westfield,	14,750	6	-	-	-	-	-	-	-
Woburn,	14,522	3	0	1	-	-	-	1	-
Peabody,	14,512	-	-	-	-	-	-	-	-
Marlborough,	14,456	6	3	3	-	1	1	-	-
Attleborough,	13,913	1	0	-	-	-	-	-	-
Adams,	13,685	-	-	-	-	-	-	-	-
Clinton,	13,105	5	3	2	-	-	-	1	-
Gardner,	13,066	5	1	1	-	1	-	-	-
Milford,	12,722	3	1	1	-	-	-	-	-
Watertown,	12,676	2	0	-	-	-	-	-	-
Plymouth,	12,514	-	-	-	-	-	-	-	-
Southbridge,	11,848	2	1	1	-	-	-	-	-
Weymouth,	11,798	3	1	1	-	1	-	-	-
Framingham,	11,749	4	-	-	-	-	-	-	-
Wakefield,	11,124	-	-	-	-	-	-	-	-
Webster,	11,109	-	-	-	-	-	-	-	-
Arlington,	10,520	1	1	-	-	-	-	-	-
Greenfield,	10,140	3	-	1	-	-	-	-	-
Recapitulation.									
Total of reporting towns,	2,365,783	720	310	241	35	47	5	10	-

WEEK ENDING SEPT. 18, 1909

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever	Measles.
Boston,	624,491	177	74	75	17	11	1	3	1
Worcester,	136,476	34	15	7	3	3	–	–	–
Fall River,	106,486	52	30	31	2	6	–	–	–
Cambridge,	102,112	28	9	12	3	4	–	–	–
Lowell,	96,380	45	19	9	1	2	1	–	–
New Bedford,	85,516	23	10	10	1	1	–	1	–
Lynn,	84,623	19	7	3	–	2	–	–	–
Springfield,	84,237	23	4	7	1	1	–	–	1
Lawrence,	78,000	37	17	15	–	3	–	–	–
Somerville,	76,049	21	5	5	–	2	–	–	–
Brockton,	55,039	9	5	3	1	–	–	–	–
Holyoke,	53,590	14	7	8	1	2	–	–	–
Malden,	41,941	11	2	6	1	3	–	–	–
Chelsea,	40,080	7	3	2	–	2	–	–	–
Newton,	39,642	7	1	3	1	2	–	–	–
Salem,	39,019	20	3	3	2	1	–	–	–
Haverhill,	38,362	19	6	6	1	1	–	–	–
Fitchburg,	34,263	6	4	–	–	–	–	–	–
Everett,	33,597	7	5	1	–	1	–	–	–
Quincy,	31,937	10	3	3	1	2	–	–	–
Taunton,	30,967	10	3	2	–	1	–	–	–
Waltham,	28,761	12	1	2	–	1	–	1	–
Pittsfield,	27,932	10	4	2	–	1	–	1	–
Brookline,	26,674	4	2	–	–	–	–	–	–
Gloucester,	26,011	13	4	1	–	1	–	–	–
North Adams,	22,150	5	2	3	2	–	–	–	–
Northampton,	21,075	5	0	–	–	–	–	–	–
Chicopee,	21,049	5	–	3	–	3	–	–	–
Medford,	20,921	5	3	1	–	–	–	–	–
Beverly,	16,386	5	3	4	–	1	–	–	–
Leominster,	16,030	5	3	–	–	–	–	–	–
Hyde Park,	15,609	3	2	1	–	–	–	–	–
Melrose,	15,459	4	1	2	–	–	–	1	–
Newburyport,	14,834	5	2	–	–	–	–	–	–
Revere,	14,820	1	1	1	1	–	–	–	–
Westfield,	14,750	–	–	–	–	–	–	–	–
Woburn,	14,522	7	2	2	–	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	4	2	–	–	–	–	–	–
Attleborough,	13,913	10	4	3	–	1	–	–	–
Adams,	13,685	5	1	2	–	2	–	–	–
Clinton,	13,105	–	–	–	–	–	–	–	–
Gardner,	13,066	6	4	1	–	–	–	–	–
Milford,	12,722	1	0	–	–	–	–	–	–
Watertown,	12,676	1	0	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	4	2	–	–	–	–	–	–
Weymouth,	11,798	2	0	–	–	–	–	–	–
Framingham,	11,749	4	2	–	–	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	5	2	–	–	–	–	–	–
Greenfield,	10,140	1	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,351,613	711	279	239	39	60	2	7	2

WEEK ENDING SEPT. 25, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	205	62	76	13	18	3	3	–
Worcester,	136,476	42	12	7	1	2	–	1	–
Fall River,	106,486	38	19	19	3	1	–	2	–
Cambridge,	102,112	30	6	9	1	3	1	1	–
Lowell,	96,380	51	22	9	3	–	2	–	–
New Bedford,	85,516	30	19	12	1	1	–	–	–
Lynn,	84,623	21	8	–	–	–	–	–	–
Springfield,	84,237	20	5	3	2	1	–	–	–
Lawrence,	78,000	35	19	15	2	3	1	–	–
Somerville,	76,049	16	4	3	1	–	1	–	–
Brockton,	55,039	7	4	5	–	–	–	–	–
Holyoke,	53,590	18	7	9	3	–	–	–	–
Malden,	41,941	8	1	1	–	1	–	–	–
Chelsea,	40,080	6	1	1	–	1	–	–	–
Newton,	39,642	7	1	2	2	–	–	–	–
Salem,	39,019	11	6	–	–	–	–	–	–
Haverhill,	38,362	11	4	3	1	1	–	–	–
Fitchburg,	34,263	11	7	–	–	–	–	–	–
Everett,	33,597	6	2	2	–	2	–	–	–
Quincy,	31,937	9	4	2	–	–	–	1	–
Taunton,	30,967	11	6	7	1	1	–	–	–
Waltham,	28,761	7	4	–	–	–	–	–	–
Pittsfield,	27,932	7	–	1	1	–	–	–	–
Brookline,	26,674	5	1	1	1	–	–	–	–
Gloucester,	26,011	2	1	–	–	–	–	–	–
North Adams,	22,150	4	2	–	–	–	–	–	–
Northampton,	21,075	6	4	1	–	1	–	–	–
Chicopee,	21,049	1	1	–	–	–	–	–	–
Medford,	20,921	4	2	1	1	–	–	–	–
Beverly,	16,386	4	1	3	1	–	–	–	–
Leominster,	16,030	0	–	–	–	–	–	–	–
Hyde Park,	15,609	4	1	–	–	–	–	–	–
Melrose,	15,459	2	0	1	–	1	–	–	–
Newburyport,	14,834	4	2	3	1	1	–	–	–
Revere,	14,820	4	1	–	–	–	–	–	–
Westfield,	14,750	5	3	1	1	–	–	–	–
Woburn,	14,522	2	0	–	–	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	5	3	1	–	–	–	–	–
Attleborough,	13,913	3	1	–	–	–	–	–	–
Adams,	13,685	3	2	–	–	–	–	–	–
Clinton,	13,105	1	0	–	–	–	–	–	–
Gardner,	13,066	3	2	1	–	1	–	–	–
Milford,	12,722	3	0	1	–	–	–	–	–
Watertown,	12,676	2	2	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	3	–	–	–	–	–	–	–
Weymouth,	11,798	–	–	–	–	–	–	–	–
Framingham,	11,749	–	–	–	–	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	1	–	–	–	–	–	–	–
Greenfield,	10,140	4	–	–	–	–	–	–	–

Recapitulation.

Total of reporting towns,	2,355,921	682	252	200	40	39	8	8	–

WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.

DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF SEPT. 4, 11, 18 AND 25, 1909.

DISEASE.	Place.	WEEK ENDING—			
		Sept. 4.	Sept. 11.	Sept. 18.	Sept. 25.
Cerebro-spinal meningitis,	Adams,	1	–	–	–
	Boston,	1	–	–	–
	Gardner,	–	–	1	–
	Holyoke,	–	1	–	–
	Lowell,	1	–	–	–
	Lynn,	–	–	1	–
	New Bedford,	1	–	–	1
	Worcester,	–	1	–	–
Scarlet fever,	Boston,	1	–	–	1
	Fall River,	1	–	–	–
	Lawrence,	1	–	–	–
	Lowell,	–	–	1	–
Whooping cough,	Boston,	–	–	1	–
	Brockton,	–	1	–	–
	Fall River,	–	–	2	–
	Haverhill,	–	1	–	–
	Lawrence,	–	–	1	–
	Taunton,	1	–	–	1
	Worcester,	2	1	–	–
Erysipelas,	Boston,	1	1	–	1
	Quincy,	1	–	–	–
	Springfield,	–	–	1	–
	Worcester,	–	1	–	–
Tuberculosis other than pulmonary.	Beverly,	1	1	1	–
	Boston,	3	6	3	4
	Brockton,	–	–	1	1
	Cambridge,	–	–	1	–
	Fall River,	–	1	–	–
	Haverhill,	2	–	–	–
	Holyoke,	–	–	1	1
	Lawrence,	–	–	–	1
	Leominster,	1	–	–	–
	Melrose,	–	–	1	–
	Newburyport,	1	–	–	1
	Quincy,	–	–	–	1
	Southbridge,	1	–	–	–
	Springfield,	–	–	2	–
Influenza,	Boston,	–	–	1	–
Tetanus,	Everett,	–	–	1	–

WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

CASES OF INFECTIOUS DISEASES REPORTED DURING THE WEEKS OF SEPT. 4, 11, 18 AND 25, 1909.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	WEEK ENDING —			
	Sept. 4.	Sept. 11.	Sept. 18.	Sept. 25.
Diphtheria,	84	101	141	141
Measles,	18	28	27	32
Scarlet fever,	70	94	116	102
Typhoid fever,	98	125	120	148
Tuberculosis, pulmonary,	151	127	163	138
Cerebro-spinal meningitis,	1	4	4	4
Whooping cough,	14	16	8	9
Varicella,	13	9	7	17
Erysipelas,	1	–	–	–
Mumps,	–	–	–	1
Ophthalmia neonatorum,	3	2	2	2
Tuberculosis other than pulmonary,	2	2	1	–
Smallpox,	–	–	1	–
Tetanus,	–	1	–	1
Tuberculosis, meningitis,	–	–	–	1
Trichinosis,	–	–	1	–

MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of September, 1909: —

ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total
Baking powder,	1	–	1	Meat products — *Con.*			
Canned fruit	2	–	2	Pressed meat,	3	–	3
Cider,	1	–	1	Sausages,	7	–	7
Cocoa,	2	–	2	Milk,	458	147	605
Confectionery,	5	–	5	Non-alcoholic drinks,	2	–	2
Cream,	6	–	6	Olive oil,	10	1	11
Drugs,	39	11	50	Pickles,	2	–	2
Flavoring extracts,	2	–	2	Potato flour,	1	–	1
Grape juice,	2	–	2	Salad dressing,	1	–	1
Honey,	1	–	1	Spices,	12	–	12
Jams and jellies,	5	–	5	Syrups,	3	2	5
Malt liquors (ale),	2	–	2	Table sauce,	2	2	4
Maple syrup,	–	1	1	Vinegar,	13	1	14
Meat products: —							
Canned meat,	5	–	5				
Hamburg steak,	1	–	1	Total,	588	165	753

The samples of drugs found to be adulterated were cocaine, hydrochloride, borax, spirit of anise, spirit of camphor and peppermint.

The cities and towns in which samples were collected were Adams, Attleborough, Boston, Brockton, Cambridge, Chelmsford, Cheshire, Concord, Dracut, Falmouth, Great Barrington, Haverhill, Hingham, Hyde Park, Lee, Leominster, Lenox, Lowell, Lynn, Marlborough, Milford, Natick, Newton, Newburyport, North Adams, Oak Bluffs, Pittsfield, Plymouth, Reading, Richmond, Rockport, Somerville, Springfield, Taunton and Wellesley.

PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING TO FOOD AND DRUGS.

Sixteen convictions were secured during the month of September, 1909, for selling adulterated food and drugs, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	Lawrence Cardella,	Haverhill,	Alcohol below standard.
2	Adolphe Bouchard,	Dracut,	Milk (total solids, 11.50).[1]
3	Frank N. Chase,	Oak Bluffs,	Milk (total solids, 11.53).[2]
4	Charles Cox,	Beverly,	Milk (total solids, 11.12).[1]
5	Charles Cox,	Beverly,	Milk (total solids, 11.17).[2]
6	William P. Crowley,	Needham,	Milk (total solids, 10.14).[1,2]
7	William P. Crowley,	Needham,	Milk (total solids, 10.40).[2]
8	Hubert H. Hall,	Great Barrington,	Milk (total solids, 8.94).[1]
9	Hubert H. Hall,	Great Barrington,	Milk (total solids, 10.26).[1]
10	Leonard Hamner,	Monterey,	Milk (total solids, 11.00).[1]
11	Leslie G. Hill,	Lowell,	Milk (total solids, 11.72).[2]
12	John Parker,	Raynham,	Milk (total solids, 11.06).[1]
13	John A. Porter,	Woburn,	Milk (total solids, 11.84).
14	John A. Porter,	Woburn,	Milk (total solids, 11.90).[3]
15	Michael Tristany,	Lee,	Olive oil, 90 per cent. cotton-seed oil.
16	Chas F. Lane,	Tisbury,	Tincture of iodine, 58 per cent. U.S.P.

[1] Watered. [2] Appealed. [3] Skimmed.

Fines imposed, $375.50.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
10503	Maple syrup,	Haskell, Adams Company, Boston, Mass.,	Contained 90 per cent. cane sugar.
1435 R	Olive oil,	Olio D'oliva, Sopraffino Lucca Brand,	Contained 65 per cent. cotton-seed oil.
2494 N	Spirit of anise,	Brockton Cut Price Drug Store, G. H. Goldthwaite, Proprietor, Brockton.	48 per cent. U.S.P. strength.
2386 N	Spirit of camphor,	E. H. Patten, East Cambridge, Mass.,	78 per cent. U.S.P. strength.
2496 N	Spirit of peppermint,	Brockton Cut Price Drug Store, G. H. Goldthwaite, Proprietor, Brockton.	68 per cent. U.S.P. strength.
q 3512	Milk,	Robert Evans, Woods Hole, Mass.,	Total solids, 10.50 per cent.; fat, 3.20 per cent.; contained added water.
10366	Milk,	Lycourzois Lampros, Lowell, Mass.,	Total solids, 13.35 per cent.; fat, 6.25 per cent.; contained added water.
1405 R	Milk,	Frank Loehr, Washington, Mass.,	Total solids, 10.86 per cent.; fat, 3.55 per cent.; contained added water.
1407 R	Milk,	Frank Loehr, Washington, Mass.,	Total solids, 10.32 per cent.; fat, 3.00 per cent.; contained added water.
1409 R	Milk,	Frank Loehr, Washington, Mass.,	Total solids, 11.60 per cent.; fat, 3.70 per cent.; contained added water.
1439 R	Milk,	Jacob F. Kirchner, Pittsfield, Mass.,	Total solids, 12.00 per cent.; fat, 4.30 per cent.; contained added water.
1469 R	Milk,	Harry Medlyn, Richmond, Mass.,	Total solids, 12.00 per cent.; fat, 4.20 per cent.; contained added water.
1471 R	Milk,	Harry Medlyn, Richmond, Mass.,	Total solids, 10.32 per cent.; fat, 2.80 per cent.; contained added water.
1485 R	Milk,	Martin E. Eagan, West Pittsfield, Mass.,	Total solids, 10.69 per cent.; fat, 3.70 per cent.; contained added water.
1487 R	Milk,	Martin E. Eagan, West Pittsfield, Mass.,	Total solids, 10.52 per cent.; fat, 3.40 per cent.; contained added water.
10434	Milk,	Ernest A. Peck, Montello, Mass.,	Total solids, 10.72 per cent.; fat, 3.40 per cent.; contained added water.
q 3635	Milk,	William McNiff, Marlborough, Mass.,	Total solids, 10.60 per cent.; fat, 3.90 per cent.; contained added water.
q 3636	Milk,	William McNiff, Marlborough, Mass.,	Total solids, 10.80 per cent.; fat, 3.80 per cent.; contained added water.
1501 R	Milk,	Henry M. Wade, Stockbridge, Mass.,	Total solids, 12.00 per cent.; fat, 4.40 per cent.; contained added water.
2354 N	Milk,	Moriano D. Arnde, Raynham, Mass.,	Total solids, 12.24 per cent.; fat, 4.40 per cent.; contained added water.

2372 N	Milk, ...	George H. Swift, Berkley, Mass., ...	Total solids, 11.60 per cent.; fat, 4.00 per cent.; contained added water.
10477	Milk, ...	Orrin H. Keith, Attleborough, Mass., ...	Total solids, 11.06 per cent.; fat, 3.55 per cent.; contained added water.
10478			Total solids, 11.13 per cent.; fat, 3.50 per cent.; contained added water.
10490			Total solids, 10.14 per cent.; fat, 3.10 per cent.; contained added water.
10491			Total solids, 10.44 per cent.; fat, 3.10 per cent.; contained added water.
10492			Total solids, 10.40 per cent.; fat, 3.10 per cent.; contained added water.
q 3671	Milk, ...	Charles W. Harris, Leominster, Mass., ...	Total solids, 10.66 per cent.; fat, 3.20 per cent.; contained added water.
10513	Milk, ...	Daniel L. Reynolds, Haverhill, Mass., ...	Total solids, 11.40 per cent.; fat, 3.60 per cent.; contained added water.
10525			Total solids, 9.85 per cent.; fat, 3.00 per cent.; contained added water.
10526			Total solids, 10.34 per cent.; fat, 3.00 per cent.; contained added water.
10544			Total solids, 11.12 per cent.; fat, 3.40 per cent.; contained added water.
10545			Total solids, 11.12 per cent.; fat, 3.40 per cent.; contained added water.
10547			Total solids, 11.09 per cent.; fat, 3.20 per cent.; contained added water.
2512 N	Milk, ...	Bartholomew J. Carroll, Natick, Mass., . . .	Total solids, 11.08 per cent.; fat, 3.40 per cent.; contained added water.
2514 N			Total solids, 10.98 per cent.; fat, 3.35 per cent.; contained added water.
2516 N			Total solids, 10.91 per cent.; fat, 3.30 per cent.; contained added water.
2518 N			Total solids, 10.96 per cent.; fat, 3.40 per cent.; contained added water.
2520 N			Total solids, 11.10 per cent.; fat, 3.60 per cent.; contained added water.
2522 N			Total solids, 11 16 per cent.; fat, 3.65 per cent.; contained added water.
2524 N			Total solids, 11.20 per cent.; fat, 3.55 per cent.; contained added water.
2526 N			Total solids, 11.30 per cent.; fat, 3.75 per cent.; contained added water.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
10308	Milk, ...	Charles Lake, care of H. P. Hood & Sons, Chelsea, Mass.,	Total solids, 9.54 per cent.; fat, 2.80 per cent.; contained added water.
10343	Milk, ...	William A. Shepperd, Hyde Park, Mass., . . .	Total solids, 11.26 per cent.; fat, 2.60 per cent.; proteid, 3.18 per cent.; skimmed milk.
10384	Milk, ...	John A. Johnson, North Adams, Mass., ...	Total solids, 10.88 per cent.; fat, 2.00 per cent.; proteid, 3.40 per cent.; skimmed milk.
1509 R	Milk, ...	George E. Blake, Lenox, Mass., ...	Total solids, 11.80 per cent.; fat, 2.80 per cent.; proteid, 3.27 per cent.; skimmed milk.
q 3677	Milk, ...	Stephen Benea, West Lynn, Mass., ...	Total solids, 11.57 per cent.; fat, 3.00 per cent.; proteid, 3.21 per cent.; skimmed milk.
q 3678	Milk, ...	Joseph Levett, West Lynn, Mass., ...	Total solids, 10.80 per cent.; fat, 1.90 per cent.; proteid, 3.33 per cent.; skimmed milk.
q 3681	Milk, ...	Charles C. Nunn, West Lynn, Mass., ...	Total solids, 11.86 per cent.; fat, 2.90 per cent.; proteid, 3.36 per cent.; skimmed milk.

INSPECTION OF DAIRIES.

During the month of September, 1909, 228 dairies were examined in the following places: —

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number to which Letters were sent.	Per Cent.
Boxford,	2	1	50.00	1	50.00
Second inspection,	10	7	70.00	3	30.00
Danvers,	9	4	44.44	5	55.56
Second inspection,	39	27	69.23	12	30.77
Gloucester,	21	11	52.38	10	47.62
Second inspection,	51	31	60.78	20	39.22
Hamilton,	–	–	–	–	–
Second inspection,	8	7	87.50	1	12.50
Third inspection,	1	1	100.00	–	–
Middleton,	–	–	–	–	–
Second inspection,	11	9	81.82	2	18.18
Peabody,	1	1	100.00	–	–
Second inspection,	16	14	87.50	2	12.50
Rockport,	11	5	45.45	6	54.55
Topsfield,	–	–	–	–	–
Second inspection,	23	12	52.17	11	47.83
Wenham,	2	2	100.00	–	–
Second inspection,	19	11	57.89	8	42.11
Third inspection,	4	2	50.00	2	50.00

Total number of dairies examined,	228
Number found to be free from objectionable conditions,	145
Number to which letters were sent,	83
Total number of conditions to which attention was called,	258
Percentage of dairies which passed inspection,	63.60

In addition to the above, 88 dairies were visited at which the sale of milk had been discontinued.

The names of the owners of dairies found to be worthy of commendation follow: —

Boxford.

Dunleigh, Henry *	Moore, Charles	Perley, Henry *
Hooper Bros.*	Parkhurst, John W.*	Twisden, J. T.*
Killham, Frank *	Perley, Charles *	

Danvers.

Armstrong, Joseph	Dodge, George W.*	Ingalls, H. A.*
Baker, Charles *	Endicott, William C.*†	Jacobs, W. A.*†
Bradstreet, A.*†	Gould, Austin L.*	Kimball, F. O.*†
Burrows, A. T.	Hayes, Herbert A.*	Learoyd, B.*†
Connors, Daniel *	Hill, A. M.*	McDonald, T.*†
Currier, W. J.*†	Hussey, E. C.*†	Mudge, A. H.*†

* Second inspection. † Reported favorably on first inspection.

Nangle, James *
O'Neil, T. H,*†
Palmer, Thomas *
Pitnam, Emery
Pope, Daniel *†
Pratt, George *
Preston, Charles *
Putnam, Alfred *†
Putnam, John M.*†
Putnam, J. Warren *
Rogers, D. P.
Sears, George B.*
Wentworth, James L.*†

Gloucester.

Andrews, Ephraim *†
Andrews, J. W.*
Andrews, Mary B.*†
Babson, M. L.*†
Barnard, George K.*†
Cole, T. & Co.*†
Davis, Sarah *†
Day, Edward *
Day, Eugene I.
Dunbar, J. W.
Friend, Albert H.*
Hagstrom, Peter
Harvey, Charles *†
Haskell, L.*
Hibbard, Frank W.*
James, George *†
Kerr, Robert
Kleinolia, G.
Lane, G. E.*†
Lane, H. P.*†
Lane, H. W.*
Lawrence, James *
Lufkin, Edward S.*†
Lufkin, F. H.*
McCormick, Mrs. William *†
Middleton, John
Monson, Austin *†
Murray, Charles
Nelson, John E.*†
Nelson, William
Nutting, John *†
O'Brien, John *
Pollard, Mrs.*
Pomeroy, Edward *
Rice, Edward
Riggs, L.
Robertson, James *
Towle, William *†
Williams, Matt
Young, Charles *
Younger, Edward *†
Younger, William *†

Hamilton.

Adams, George W.‡
Berry, Fred *†
Cilley, Dr. O. G.*†
Knowlton, Isaac F.*
Marshall, Frank *
Stone, John B.*
Whipple, C. E.*†
Whipple, Emerson A.*

Middleton.

Averill & Doyle *
Berry, William *†
Fuller, John P.*
Harden, Harlin *
Hutchinson, E. S.*†
Jones, John *
Phillips, B. F.*†
Sanford, J. B.*†
Wilkins, G. P.*

Peabody.

Berry, William T.*†
Bushby, P.*
Gilmore, M. J.*†
Goodale, J. O.*
McIntyre, Frank *†
Newhall, F. L.*
Parker, N. W.*†
Pitnam, T. L.*†
Room, J. H.
Sanders, Charles *†
Southwick, Daniel B.*†
Stanley, Frank *†
Trask, J. A.*†
Webster, Dr. J.*†
Williams, Charles G.*†

Rockport.

Evans, William H.
Hodskins, W. B.*
Lane, Arthur W.*
Lane, Charles *
Nelson, Peter
Pearson, Andrew
Poole, John J.*†
Poole, Joseph *†
Poole, Nathaniel *
Smith, George E.
Stevens, Scott

Topsfield.

Cass, Mrs. F. F.*
Conant, D.*
Jordan, C. F.*†
Lamson, Estate of J. A.*†
Merideth, J. M.*†
Peabody, Estate of Alden P.*
Pierce, T. W.*†
Pike, B. P.*
Pingree, David *†
Rust, F. W.*†
Towne, Frank H.*
Williams, Harry *†

* Second inspection. † Reported favorably on first inspection. ‡ Third inspection.

Wenham.

Barnes, Thomas	Johnson, Frank *	Preston, D. W.‡
Burnham, A.*†	Johnson, W. H.*†	Putnam, W. S.*†
Cole, E. W.*†	Perkins, N. P.*†	Stillman, Henry ‡
Dodge, Elbridge *	Pingree, Mrs. H. E.*†	Tarr, Mrs. F. H.*
Dodge, William P.*†	Porter, Mrs. A.*	Trefy, Charles

FACTS RELATING TO DAIRIES SUPPLYING MILK FOR PUBLIC SALE IN FALL RIVER.

During the month of September, 50 dairies supplying milk for public sale in Fall River were examined, of which 34 are situated in Rhode Island.

The usual method of handling milk was as follows: the cows were milked into large, open tin pails; the milk was strained through a brass strainer, and generally through cheese cloth, in a little milk house, kitchen or in the yard near the well; the milk was then cooled, either by putting the cans in tubs of water or by sinking them in the well.

While it was understood that the milk cans were to be returned clean, it was not uncommon for the farmers to say that they often did not smell clean and that they had to be washed again. Moreover, the investigation disclosed the fact that the outside of the cans was always dirty, and that the inside frequently did not look or smell clean. Stoppers were often dirty. Empty cans thrown by the roadside were covered with dust by the time the farmer received them. The cans were so mixed that those received by A to-day might go to B to-morrow. The milk teams were not so clean as they should be.

The Rhode Island dairies yielded the following data: the cows were frequently found in dark, dirty, damp, dingy barn cellars, sometimes with horses, but more often the horses were on the floor directly above the cows. Other barns were little more than sheds. A few gave evidence of having been whitewashed at some time, and were fairly light, but even in these, cows and horses were kept together side by side, or, sometimes, directly opposite one another.

The manure appeared to be thrown out the nearest door or window, and to cover considerable area.

The milk room, a small building, was generally within 10 feet of the barn. It was not screened and flies were abundant. While stoppers were removed from empty cans to "let them air," previous to pouring in the milk, flies crawled into the cans, often coming directly from the

* Second inspection. † Reported favorably on first inspection. ‡ Third inspection.

barn, barnyard or near-by privy. This was a common occurrence, even immediately previous to filling the cans with milk.

In several cases the barn, milk room, privy and well were within a 30-foot radius. In one case the privy was in the barn cellar, within 15 feet of the cows. In most instances the soil was sandy, and it seemed that well pollution from the barn or privy, or both, was inevitable. In one case water was used from a spring which was in the barn cellar, 3 feet from and 3 feet below a large pigpen containing 8 pigs. Within 15 feet were the cow stalls, while horses were on the floor above. The privies, too frequently near water supplies, were, without exception, filthy. The old-fashioned dirt vault, which in some instances was so shallow as not to constitute a vault, was the custom; the baseboards were frequently loose, open or cracked; the seats were uncovered and the doors open. Entrance into one of these privies always aroused swarms of flies.

Surface sink drains and dirty garbage buckets were sometimes noted not far from the barnyards, and these were frequently untidy.

Most of the dairymen were said to use no water on the hands or udders before milking.

The 16 Massachusetts dairies visited were clean, light and airy, and as a rule had whitened walls. The manure was generally piled at one end of the yard and not scattered, and the yards were clean.

The milk rooms were clean, and although not screened did not contain many flies, due, perhaps, to the fact that the doors were kept closed. The privy was in no instance near the milk room.

The water supply was generally from a closed well supplied with a windmill; most farmers had two wells, one for the house and one for the barn. With but few exceptions there was no apparent well pollution.

The privies were sometimes in the house, with hard dirt or brick vaults; when outside they were generally properly constructed.

The examination of the 50 dairies showed that the least favorable sanitary conditions noted among the Massachusetts dairies were better than the most favorable conditions noted in the neighboring State of Rhode Island.

TYPHOID FEVER OUTBREAK AT JEFFERSON, MASS.

On September 21 there was reported from Dorchester a case of typhoid fever that gave a history of having spent Labor Day at a hotel at Jefferson, Mass. On September 22, a case from Cambridge and on September 23 a case from East Boston was reported that gave a similar

history. About this same time several other people, who had spent Labor Day at this hotel in Jefferson, appeared at the Boston City and Carney hospitals sick with typhoid fever. An investigation of the source of these cases was immediately begun.

Among the Labor Day guests at the Mount Pleasant House in Jefferson, 59, or a few less than a tenth of the guests, were found to be infected with typhoid fever. The distribution of these cases was as follows: —

Boston:		
Brighton,	1	
Charlestown,	4	
Dorchester,	18	
East Boston,	6	
Roxbury,	5	
South Boston,	2	
		36
Blackstone,		1
Brookline,		1
Cambridge,		6
Somerville,		1
Waltham,		1
Worcester,		4
Pawtucket, R. I.,		2
Providence, R. I.,		6
New Haven, Conn.,		1
Total,		59

These 59 cases were distributed among 52 households. The age periods of the cases was as follows: —

Under 10 years,	1
11 to 15 years,	7
16 to 20 years,	14
21 to 25 years,	15
26 to 30 years,	11
31 to 35 years,	6
35 to 40 years,	3
Over 40 years,	1
	58

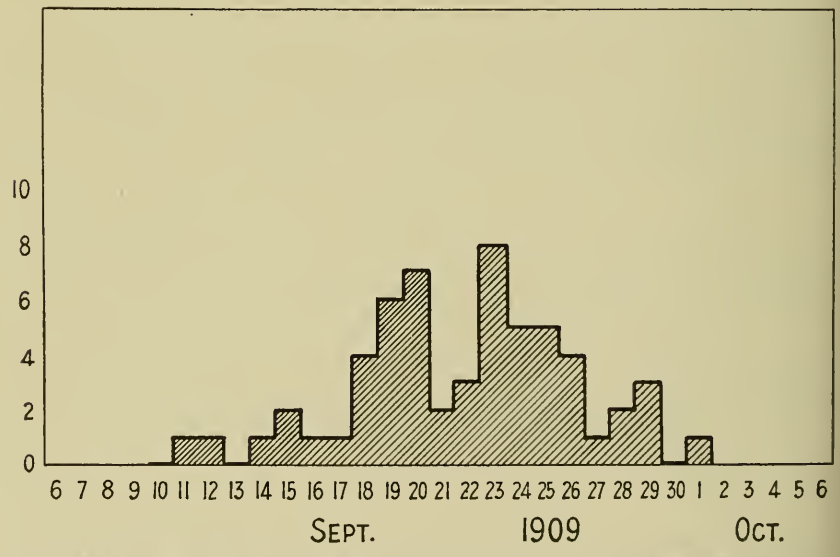
All of these cases spent a part of Sunday, September 5, and Monday, September 6, Labor Day, at the hotel together. Some of the guests came on Sunday and others left on Monday.

The meals taken in common by 19 of these guests, who came late or left early, are as follows: —

Sunday, September 5: —	
Breakfast,	15
Dinner,	18
Supper,	19
Monday, September 6: —	
Breakfast,	19
Dinner,	14
Supper,	9
Tuesday, September 7: —	
Breakfast,	3

No cases of typhoid fever have been reported among guests of the hotel who left on or before Sunday, September 5, or who arrived at the hotel on or subsequent to Monday morning, September 6.

The incidence of morbidity among the infected cases is shown graphically in the accompanying chart.



INCIDENCE OF CASES OF TYPHOID FEVER AS CONTRACTED AT JEFFERSON, MASS., ON SEPT. 6, 1909.

Inquiry among the cases showed that they did not arrive or leave at the same time: that they were not a closely associated group, apart from the other hotel guests; that they had not been off on any expedition or party where they could have gotten food from outside the hotel.

No evidence was found to suggest that infection of the cases had taken place outside of the hotel. Investigation of the conditions at the hotel showed the following facts.

The Mount Pleasant House is admirably situated on high ground overlooking the town of Jefferson. The sewage from the hotel drains off into a valley and is there well taken care of by filter beds. There was no evidence of any break in the sewerage system or contamination of the hotel water supply. The water used by the hotel came from two sources. The hotel is supplied with the same water as the towns of Jefferson and Holden. This water was causing no typhoid fever among the people in the villages. In front of the hotel is a well, which was frequently used as drinking water by the hotel guests. During the summer this water had caused no sickness. Examination of the water showed no evidence of sewage contamination.

The fresh vegetables used at the hotel were supplied by a large wholesale dealer in Worcester. No evidence was found to show that the lettuce or celery used had been irrigated with sewage, or that these vegetables were causing any typhoid fever in other localities.

The milk furnished the hotel came from three sources. A small amount of it was produced on the place. No evidence of fever past or present was found among the stable men, and no source of pollution of the milk at the stable was noted. Another portion of the milk was obtained from two farms not far from the hotel. The sanitary conditions at these farms were not of the best or above criticism, but no past or present history of typhoid fever was found at either of them. The bulk of the milk was obtained from the milk train of a large Boston milk contractor. No typhoid fever was discovered among the farms furnishing this milk, and no fever was being caused by this same milk when brought down to Boston and mixed with the milk of the contractor's general supply.

Investigation among the past and present employees of the hotel showed that at the time of the investigation no one at the hotel was sick or had been recently sick with any fever suggesting typhoid fever. Among the past employees two maids were reported sick. One of these maids had been at the hotel from July 3 to September 6, when she returned to her home, seemingly in excellent health. She taught school for ten days, and then began, on September 17, to have a headache. On September 21 she went to bed, and on September 25 showed a positive Widal test. No reason was found to show that this maid had been infected before the general infection at the hotel, or that she had been the source of the outbreak. The other maid reported sick left the hotel September 9. At that time she was feeling pretty thoroughly

tired out. Saturday night, two days later, she complained of considerable thirst, and on Sunday morning she woke with a bad headache. When seen by a doctor on Wednesday, September 15, she had a temperature of 102.5, which two days later reached 103.8. The Widal reaction was found to be positive on September 22. On September 24 she was sent to St. Vincent's Hospital in Worcester. On September 28 her temperature reached normal, and remained so during an uneventful convalescence.

This case antedates by a period of from one day to two weeks all the cases supposed to have been infected at Jefferson. As it is possible for a case of typhoid fever to be a source of infection for ten days or two weeks before the onset of symptoms, there seems to be no reason why this maid, whose symptoms began September 11 or earlier, should not have been a source of infection on September 5, six days previous.

Inquiry as to the mode in which the food at the hotel might have been infected by this suspected maid disclosed the following facts: —

The bulk of the milk used at the hotel arrives at the Jefferson station at 8 A.M. Part of this milk is used by the late breakfast guests the morning of its arrival. A part of the milk that is unused during the day is kept and supplied to some of the guests the subsequent morning. When the hotel is crowded, the quantity of milk used is greater than can be stored in the hotel ice chest. Consequently some of the milk is left standing in the cans uniced during the night. The milk is transferred from the cans to pitchers with the help of long-handled ladles or dippers. These dippers are often dropped back into the cans and sometimes lost in the cans. The pitchers are filled by the several table maids, and are then placed directly on the tables or on sideboards, from which glasses are filled. The maid from whom the infection may have come was very fond of milk. For supper she was accustomed to have merely milk and cakes. The milk then used may have been taken from a partly used pitcher from the hotel supper table, from a pitcher filled by this or another maid for the servants' table, or from a glass filled by this maid directly from one of the cans. This maid also was accustomed — contrary to the rules — to get a glass of milk at bedtime. This drink of milk may have been from a glass filled from one of the cans or it may have been directly from the dipper. This maid seemingly had excellent opportunities to infect the milk, either directly by dipping her hands into it, or indirectly by polluting with her hands or mouth a dipper which was dropped back into the milk can.

Among the cases of typhoid fever thought to have been contracted at Jefferson, 45, or 77 per cent. of the 58 cases seen, drank the milk; 5, or 9 per cent., had cream on cereals or fruit; and 8, or 14 per cent.,

had milk or cream in tea, coffee or cocoa; 100 per cent. of the 54 cases examined among 58 cases reported to have contracted typhoid fever at the Mount Pleasant House drank the milk, or had it on cereals or fruit, or in tea, coffee or cocoa. One case that was a guest at the hotel from August 10 to September 7 is said to have overslept on the morning of Labor Day and to have had no breakfast. With this one exception all the cases of typhoid fever thought to have been exposed to infection at Jefferson probably partook of the milk served to the hotel guests on the morning of Labor Day, September 6.

The vicarious manner in which the infection was distributed among the guests seemingly is explained in part by the varying susceptibility of different individuals, and in part by the way in which the contents of one of the cans of milk used was distributed here and there among the guests in pitchers and individual glasses.

Conclusions.

1. The Jefferson typhoid outbreak was milk borne.
2. At the time the infection took place a table maid was employed at the hotel who was capable of causing the infection.
3. This maid had ample opportunity to infect a portion of the milk supplied at the hotel.
4. The infection of the milk probably took place Sunday afternoon or evening.
5. The polluted milk, after standing improperly iced all night, was thoroughly infected when served at breakfast the next morning.
6. With but one exception, all the cases infected were said to have been present at breakfast on the morning of Labor Day, September 6.
7. One hundred per cent. of the people thought to have been infected with typhoid fever at the Mount Pleasant House used milk at the hotel in one form or another.

THE STATE OF KANSAS AND THE COMMON DRINKING CUP.

The following resolution was adopted recently by the Kansas State Board of Health:—

Whereas, It has been repeatedly demonstrated that the use of what is usually known as the common drinking cup is dangerous, and is an undoubted source of communication of infectious diseases, now, therefore, in the interest of the public health,

Be it ruled by the Kansas State Board of Health:

That the use of the common drinking cup on railroad trains, in railroad stations, in the public and private schools and the State educational institutions of the State of Kansas is hereby prohibited, from and after Sept. 1, 1909.

No person or corporation in charge of or control of any railroad train, or station, or public or private school, or State educational institution shall furnish any drinking cup for public use, and no such person or corporation shall permit on said railroad train, or station, or at said public or private school, or State educational institution, the common use of the drinking cup.

RESIGNATION AND APPOINTMENT.

Dr. Herbert C. Emerson of Springfield, State Inspector of Health of District No. 14, submitted his resignation to the Governor early in August. Dr. James V. W. Boyd of Springfield was appointed to fill the vacancy, and the appointment was confirmed by the Governor's Council on September 8.

SHAW'S MALT: PROHIBITION OF SALE REMOVED.

This preparation, as now presented to the trade, being properly labeled, may be sold at retail.

MONTHLY BULLETIN

OF THE

STATE BOARD OF HEALTH

OF

MASSACHUSETTS.

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WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS OF MORE THAN 10,000 POPULATION.

WEEK ENDING OCT. 2, 1909.

CITIES AND TOWNS.	Population.[1] Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	183	53	64	11	19	2	3	–
Worcester,	136,476	37	17	7	4	1	–	–	–
Fall River,	106,486	39	25	24	2	2	–	1	–
Cambridge,	102,112	20	7	10	2	3	–	1	–
Lowell,	96,380	30	13	6	1	2	–	–	–
New Bedford,	85,516	34	10	17	4	6	–	1	–
Lynn,	84,623	30	5	2	–	1	1	–	–
Springfield,	84,237	19	2	6	3	2	–	–	–
Lawrence,	78,000	24	14	16	–	2	1	1	–
Somerville,	76,049	14	4	3	–	–	–	–	–
Brockton,	55,039	11	2	4	–	1	–	1	–
Holyoke,	53,590	21	8	8	–	2	–	–	–
Malden,	41,941	10	3	1	–	–	1	–	–
Chelsea,	40,080	7	3	1	–	1	–	–	–
Newton,	39,642	6	1	1	–	1	–	–	–
Salem,	39,019	11	4	–	–	–	–	–	–
Haverhill,	38,362	9	1	–	–	–	–	–	–
Fitchburg,	34,263	10	6	2	–	–	1	–	–
Everett,	33,597	8	3	–	–	–	–	–	–
Quincy,	31,937	3	1	–	–	–	–	–	–
Taunton,	30,967	9	3	5	1	1	–	1	–
Waltham,	28,761	5	2	2	–	1	–	1	–
Pittsfield,	27,932	6	5	–	–	–	–	–	–
Brookline,	26,674	4	–	–	–	–	–	–	–
Gloucester,	26,011	4	2	–	–	–	–	–	–
North Adams,	22,150	12	4	5	1	1	–	1	–
Northampton,	21,075	4	1	–	–	–	–	–	–
Chicopee,	21,049	6	4	1	–	–	–	–	–
Medford,	20,921	6	1	1	–	1	–	–	–
Beverly,	16,386	8	1	2	1	–	–	–	–
Leominster,	16,030	4	2	1	1	–	–	–	–
Hyde Park,	15,609	1	1	1	–	–	–	–	–
Melrose,	15,459	8	1	4	–	3	–	–	–
Newburyport,	14,834	2	–	–	–	–	–	–	–
Revere,	14,820	4	–	1	–	1	–	–	–
Westfield,	14,750	1	–	–	–	–	–	–	–
Woburn,	14,522	9	2	5	–	1	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	3	1	1	–	–	–	–	–
Attleborough,	13,913	5	3	–	–	–	–	–	–
Adams,	13,685	2	1	–	–	–	–	–	–
Clinton,	13,105	4	1	1	–	1	–	–	–
Gardner,	13,066	6	3	2	–	2	–	–	–
Milford,	12,722	3	0	–	–	–	–	–	–
Watertown,	12,676	4	0	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	1	–	1	–	–	–	–	–
Weymouth,	11,798	2	0	1	–	–	–	–	–
Framingham,	11,749	4	2	1	–	–	–	–	1
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	1	1	–	–	–	–	–	–
Greenfield,	10,140	1	–	1	–	1	–	–	–
Recapitulation.									
Total of reporting towns,	2,379,468	655	223	208	31	56	6	11	1

[1] The populations were estimated upon the rate of growth from 1900 to 1905. Those of Taunton, Gloucester, North Adams and Clinton were allowed to stand as in 1905, having shown no increase during the five-year period. The gain in the population of Lowell is due to the annexation of a part of the town of Tewksbury. The population of Lawrence by the census of 1905 was 70,050, but, owing to the building of the new Wood and Arlington mills, an increase of about 8,000 is estimated by the Lawrence Board of Health, or 78,000.

WEEK ENDING OCT. 9, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	201	56	61	13	10	2	6	–
Worcester,	136,476	43	15	11	5	3	–	1	–
Fall River,	106,486	45	28	24	2	1	–	–	–
Cambridge,	102,112	24	5	12	1	8	–	1	–
Lowell,	96,380	34	15	6	1	3	–	–	–
New Bedford,	85,516	37	25	11	4	2	–	3	–
Lynn,	84,623	19	5	2	–	–	–	1	–
Springfield,	84,237	24	7	4	1	1	–	–	–
Lawrence,	78,000	25	8	11	3	4	–	–	–
Somerville,	76,049	15	5	3	1	–	–	–	–
Brockton,	55,039	14	3	4	1	–	–	–	–
Holyoke,	53,590	17	11	11	2	1	–	–	–
Malden,	41,941	10	6	–	–	–	–	–	–
Chelsea,	40,080	6	2	1	–	–	1	–	–
Newton,	39,642	5	2	1	1	–	–	–	–
Salem,	39,019	11	2	–	–	–	–	–	–
Haverhill,	38,362	7	1	3	–	3	–	–	–
Fitchburg,	34,263	7	3	3	2	–	–	1	–
Everett,	33,597	10	5	2	–	2	–	–	–
Quincy,	31,937	7	4	1	–	1	–	–	–
Taunton,	30,967	17	3	4	1	1	–	1	–
Waltham,	28,761	10	6	4	–	–	–	–	–
Pittsfield,	27,932	7	4	4	3	–	–	–	–
Brookline,	26,674	9	–	1	1	–	–	–	–
Gloucester,	26,011	1	–	–	–	–	–	–	–
North Adams,	22,150	7	1	1	–	–	–	–	–
Northampton,	21,075	9	1	1	–	1	–	–	–
Chicopee,	21,049	5	4	1	1	–	–	–	–
Medford,	20,921	5	1	2	–	1	–	–	–
Beverly,	16,386	1	–	–	–	–	–	–	–
Leominster,	16,030	3	–	–	–	–	–	–	–
Hyde Park,	15,609	0	–	–	–	–	–	–	–
Melrose,	15,459	3	0	2	–	2	–	–	–
Newburyport,	14,834	1	–	–	–	–	–	–	–
Revere,	14,820	2	1	–	–	–	–	–	–
Westfield,	14,750	6	3	2	2	–	–	–	–
Woburn,	14,522	4	1	2	1	1	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	8	2	–	–	–	–	–	–
Attleborough,	13,913	–	–	–	–	–	–	–	–
Adams,	13,685	3	–	–	–	–	–	–	–
Clinton,	13,105	5	2	1	–	–	–	1	–
Gardner,	13,066	2	0	1	–	1	–	–	–
Milford,	12,722	2	0	–	–	–	–	–	–
Watertown,	12,676	4	1	1	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	4	2	1	–	1	–	–	–
Weymouth,	11,798	3	3	3	1	–	1	–	–
Framingham,	11,749	5	1	3	2	1	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	1	–	–	–	–	–	–	–
Greenfield,	10,140	5	–	2	–	1	–	1	–
Recapitulation.									
Total of reporting towns,	2,365,555	693	244	207	49	49	4	16	–

WEEK ENDING OCT. 16, 1909

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM—					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	181	47	58	10	21	2	5	–
Worcester,	136,476	29	7	5	1	1	–	–	–
Fall River,	106,486	54	30	24	5	1	1	2	–
Cambridge,	102,112	27	4	10	2	5	–	1	–
Lowell,	96,380	34	13	12	5	5	1	–	–
New Bedford,	85,516	43	17	18	3	4	–	–	–
Lynn,	84,623	26	7	6	2	1	1	–	–
Springfield,	84,237	30	10	15	4	4	–	2	1
Lawrence,	78,000	25	15	9	–	2	–	–	–
Somerville,	76,049	15	3	6	1	–	–	2	–
Brockton,	55,039	6	4	–	–	–	–	–	–
Holyoke,	53,590	13	4	3	–	2	–	–	–
Malden,	41,941	7	1	2	–	1	–	–	–
Chelsea,	40,080	7	2	2	–	–	–	–	–
Newton,	39,642	10	3	1	–	–	–	1	–
Salem,	39,019	11	4	2	2	–	–	–	–
Haverhill,	38,362	7	4	3	1	1	–	–	–
Fitchburg,	34,263	10	6	5	–	2	–	–	–
Everett,	33,597	6	2	1	–	1	–	–	–
Quincy,	31,937	6	1	3	2	1	–	–	–
Taunton,	30,967	15	4	3	1	–	–	1	–
Waltham,	28,761	13	5	2	–	–	1	–	–
Pittsfield,	27,932	3	1	2	1	–	–	–	1
Brookline,	26,674	7	–	–	–	–	–	–	–
Gloucester,	26,011	9	2	2	–	2	–	–	–
North Adams,	22,150	7	2	2	–	–	–	1	–
Northampton,	21,075	7	1	2	1	1	–	–	–
Chicopee,	21,049	5	3	2	2	–	–	–	–
Medford,	20,921	2	2	1	–	–	–	–	–
Beverly,	16,386	9	1	3	–	2	–	–	–
Leominster,	16,030	3	2	2	–	–	1	–	–
Hyde Park,	15,609	9	1	1	1	–	–	–	–
Melrose,	15,459	4	0	–	–	–	–	–	–
Newburyport,	14,834	4	1	1	1	–	–	–	–
Revere,	14,820	2	–	–	–	–	–	–	–
Westfield,	14,750	8	4	2	2	–	–	–	–
Woburn,	14,522	3	0	–	–	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	3	1	1	1	–	–	–	–
Attleborough,	13,913	4	1	–	–	–	–	–	–
Adams,	13,685	4	1	1	–	1	–	–	–
Clinton,	13,105	2	–	–	–	–	–	–	–
Gardner,	13,066	2	0	1	–	–	1	–	–
Milford,	12,722	3	2	2	1	1	–	–	–
Watertown,	12,676	1	0	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	4	2	2	–	–	–	2	–
Weymouth,	11,798	1	1	1	1	–	–	–	–
Framingham,	11,749	3	1	–	–	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	0	–	–	–	–	–	–	–
Greenfield,	10,140	3	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,379,468	687	223	217	49	59	8	17	2

WEEK ENDING OCT. 23, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	202	59	80	16	27	3	9	1
Worcester,	136,476	33	9	9	5	2	2	–	–
Fall River,	106,486	42	23	16	5	2	–	–	–
Cambridge,	102,112	21	6	12	5	4	–	–	–
Lowell,	96,380	27	12	8	3	1	3	–	–
New Bedford,	85,516	37	14	17	3	1	1	1	–
Lynn,	84,623	23	4	4	2	1	1	–	–
Springfield,	84,237	24	6	8	2	1	1	1	–
Lawrence,	78,000	31	16	13	3	3	3	1	1
Somerville,	76,049	17	3	7	1	4	–	–	–
Brockton,	55,039	12	1	3	–	1	–	–	–
Holyoke,	53,590	7	5	5	1	–	–	–	–
Malden,	41,941	20	7	6	2	3	–	–	–
Chelsea,	40,080	8	3	–	–	–	–	–	–
Newton,	39,642	5	3	1	1	–	–	–	–
Salem,	39,019	9	2	2	–	2	–	–	–
Haverhill,	38,362	12	3	4	1	2	–	–	–
Fitchburg,	34,263	10	4	2	1	–	–	–	–
Everett,	33,597	6	3	–	–	–	–	–	–
Quincy,	31,937	9	4	2	1	–	1	–	–
Taunton,	30,967	20	5	10	2	1	–	2	–
Waltham,	28,761	5	2	–	–	–	–	–	–
Pittsfield,	27,932	6	3	–	–	–	–	–	–
Brookline,	26,674	8	–	2	1	–	–	1	–
Gloucester,	26,011	2	–	–	–	–	–	–	–
North Adams,	22,150	2	–	–	–	–	–	–	–
Northampton,	21,075	6	1	–	–	–	–	–	–
Chicopee,	21,049	3	3	–	–	–	–	–	–
Medford,	20,921	1	–	–	–	–	–	–	–
Beverly,	16,386	6	1	2	–	–	–	–	–
Leominster,	16,030	2	1	1	1	–	–	–	–
Hyde Park,	15,609	1	1	–	–	–	–	–	–
Melrose,	15,459	2	0	–	–	–	–	–	–
Newburyport,	14,834	5	–	2	1	1	–	–	–
Revere,	14,820	4	–	1	1	–	–	–	–
Westfield,	14,750	2	–	–	–	–	–	–	–
Woburn,	14,522	3	1	–	–	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	8	3	3	–	–	3	–	–
Attleborough,	13,913	2	1	1	1	–	–	–	–
Adams,	13,685	3	1	3	2	1	–	–	–
Clinton,	13,105	5	–	1	–	1	–	–	–
Gardner,	13,066	4	0	1	–	1	–	–	–
Milford,	12,722	2	1	–	–	–	–	–	–
Watertown,	12,676	3	–	1	1	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	0	–	–	–	–	–	–	–
Weymouth,	11,798	2	0	–	–	–	–	–	–
Framingham,	11,749	4	–	3	–	2	1	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	0	–	–	–	–	–	–	–
Greenfield,	10,140	4	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,379,468	670	211	230	62	61	19	15	2

WEEK ENDING OCT. 30, 1909.

CITIES AND TOWNS.	Population Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM —					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	197	39	55	17	17	3	4	–
Worcester,	136,476	34	–	12	7	2	1	1	–
Fall River,	106,486	35	17	7	4	–	1	2	–
Cambridge,	102,112	25	5	8	1	3	1	1	–
Lowell,	96,380	32	10	12	3	6	1	–	–
New Bedford,	85,516	25	11	11	2	4	–	1	–
Lynn,	84,623	18	3	4	–	4	–	–	–
Springfield,	84,237	21	8	7	3	1	1	1	–
Lawrence,	78,000	18	10	8	1	1	1	1	–
Somerville,	76,049	16	5	9	2	3	–	1	–
Brockton,	55,039	8	2	3	2	–	1	–	–
Holyoke,	53,590	26	6	7	2	1	1	1	–
Malden,	41,941	8	1	2	1	–	1	–	–
Chelsea,	40,080	10	0	1	–	1	–	–	–
Newton,	39,642	6	–	–	–	–	–	–	–
Salem,	39,019	16	3	1	1	–	–	–	–
Haverhill,	38,362	14	2	5	2	–	1	1	–
Fitchburg,	34,263	10	3	2	2	–	–	–	–
Everett,	33,597	6	1	–	–	–	–	–	–
Quincy,	31,937	9	2	1	–	1	–	–	–
Taunton,	30,967	16	5	5	3	–	–	1	–
Waltham,	28,761	4	1	1	–	–	–	–	–
Pittsfield,	27,932	6	1	1	1	–	–	–	–
Brookline,	26,674	5	–	–	–	–	–	–	–
Gloucester,	26,011	4	–	–	–	–	–	–	–
North Adams,	22,150	8	2	2	1	–	–	1	–
Northampton,	21,075	10	3	4	2	–	1	–	–
Chicopee,	21,049	8	4	2	–	2	–	–	–
Medford,	20,921	4	2	1	–	–	–	–	–
Beverly,	16,386	5	–	–	–	–	–	–	–
Leominster,	16,030	1	–	–	–	–	–	–	–
Hyde Park,	15,609	6	–	3	–	3	–	–	–
Melrose,	15,459	4	1	–	–	–	–	–	–
Newburyport,	14,834	5	–	4	2	2	–	–	–
Revere,	14,820	5	1	1	–	1	–	–	–
Westfield,	14,750	3	2	1	1	–	–	–	–
Woburn,	14,522	3	0	1	–	1	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	3	1	2	–	1	1	–	–
Attleborough,	13,913	3	2	1	1	–	–	–	–
Adams,	13,685	1	–	1	–	1	–	–	–
Clinton,	13,105	7	1	1	–	1	–	–	–
Gardner,	13,066	5	2	1	–	–	–	–	–
Milford,	12,722	6	1	2	2	–	–	–	–
Watertown,	12,676	3	0	1	1	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	2	1	1	–	–	1	–	–
Weymouth,	11,798	2	1	1	–	–	–	–	–
Framingham,	11,749	3	1	1	–	–	–	1	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	3	1	1	–	1	–	–	–
Greenfield,	10,140	4	–	–	–	–	–	–	–

Recapitulation.

Total of reporting towns,	2,379,468	673	161	194	64	57	16	17	–

WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.

DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF OCT. 2, 9, 16, 23 AND 30, 1909.

DISEASE.	Place.	WEEK ENDING —				
		Oct. 2.	Oct. 9.	Oct. 16.	Oct. 23.	Oct. 30.
Cerebro-spinal meningitis,	Chelsea,	–	–	1	–	–
	Hyde Park,	1	–	–	–	–
	Lowell,	1	–	–	–	–
	Lynn,	–	–	1	–	–
	Marlborough,	1	–	–	–	–
	Worcester,	2	2	–	–	1
Scarlet fever,	Boston,	1	2	–	1	2
	Fitchburg,	1	–	2	1	–
	Holyoke,	–	1	–	–	–
	Lowell,	1	–	–	–	–
	Malden,	–	–	1	–	–
	Waltham,	–	1	–	–	1
Whooping cough,	Boston,	1	1	–	–	1
	Brockton,	–	1	–	–	–
	Cambridge,	–	–	–	–	1
	Fitchburg,	–	–	1	–	–
	Haverhill,	–	–	1	–	–
	Holyoke,	1	–	–	–	–
	Lawrence,	–	–	–	–	1
Erysipelas,	Boston,	1	–	–	–	–
	Northampton,	–	–	–	–	1
Tuberculosis other than pulmonary.	Beverly,	–	–	1	–	–
	Boston,	4	4	5	1	1
	Brockton,	2	2	–	1	–
	Cambridge,	1	1	1	1	–
	Chelsea,	–	–	1	–	–
	Haverhill,	–	–	–	1	1
	Holyoke,	–	1	–	–	–
	Lawrence,	1	–	–	–	–
	Medford,	–	1	1	–	1
	Melrose,	1	–	–	–	–
	New Bedford,	–	2	1	1	–
	Somerville,	–	–	1	1	–
	Springfield,	–	–	–	3	–
	Taunton,	–	1	1	–	–
	Waltham,	–	–	1	–	–
	Weymouth,	1	1	–	–	1
	Woburn,	2	–	–	–	–
Meningitis other than cerebro-spinal.	Watertown,	–	1	–	–	–

DISEASE.	Place.	Week ending — Oct. 2.	Oct. 9.	Oct. 16.	Oct. 23.	Oct. 30.
Influenza,	Boston,	–	–	1	–	2
Tetanus,	New Bedford,	–	–	–	–	1
Smallpox,	Boston,	–	–	–	1	–
Anterior poliomyelitis,	Medford,	1	–	–	–	–
	Quincy,	–	1	–	–	–
	New Bedford,	–	–	1	–	–

WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

Cases of Infectious Diseases reported during the Weeks of Oct. 2, 9, 16, 23 and 30, 1909.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending — Oct. 2.	Oct. 9.	Oct. 16.	Oct. 23.	Oct. 30.
Diphtheria,	126	166	181	206	217
Measles,	23	72	71	112	98
Scarlet fever,	107	116	116	152	140
Typhoid fever,	117	156	146	111	92
Tuberculosis, pulmonary,	125	124	136	146	129
Cerebro-spinal meningitis,	1	3	–	–	–
Whooping cough,	1	24	24	22	43
Varicella,	10	7	17	4	42
Erysipelas,	–	–	–	–	1
Mumps,	–	–	–	–	–
Ophthalmia neonatorum,	–	5	4	4	2
Tuberculosis other than pulmonary,	–	–	1	1	2
Smallpox,	1	1	–	1	–
Tetanus,	–	–	–	1	–
Meningitis other than cerebro-spinal,	1	–	–	–	–
Trichinosis,	–	–	–	1	–
Anthrax,	–	1	–	–	–
Malaria,	1	–	–	–	–
Actinomycosis,	–	–	–	1	–
Trachoma,	–	–	1	–	–

MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of October, 1909: —

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Butter,	13	–	13	Lard,	2	–	2
Cheese,	4	–	4	Malt liquors,			
Cider,	4	–	4	beer,	1	–	1
Cocoa,	1	–	1	Meats,	8	–	8
Confectionery,	4	–	4	Milk,	299	56	355
Cream,	5	–	5	Non-alcoholic			
Cream of tartar,	2	–	2	drinks,	1	–	1
Drugs,	66	27	93	Olive oil,	10	2	12
Flavoring ex-				Pickles,	4	–	4
tracts,	5	1	6	Proprietary foods,	–	4	4
Grape juice,	1	1	2	Spices,	7	–	7
Honey,	5	–	5	Table sauce,	2	1	3
Jams, jellies and preserves,	10	1	11	Total,	454	93	547

The samples of drugs found to be adulterated were: camphor liniment, spirit of anise, spirit of camphor, spirit of peppermint, tincture of iodine, ointment of zinc oxide, and a proprietary preparation.

The cities and towns in which samples were collected were: Adams, Andover, Attleborough, Barnstable, Berkley, Brockton, Brookline, Cambridge, Chelmsford, Chelsea, Concord, Dalton, Danvers, Fall River, Fitchburg, Hyde Park, Lanesborough, Lawrence, Leominster, Lee, Lowell, Lynn, Mansfield, Marlborough, Natick, Newburyport, North Adams, Pittsfield, Quincy, Raynham, Salem, Somerville, Spencer, Taunton, Watertown, Weymouth, Wilmington and Woburn.

PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING TO FOOD AND DRUGS.

Thirty-one convictions were secured during the month of October, 1909, for selling adulterated food and drugs, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	Mariano Arude,	Raynham,	Milk (total solids, 12.24).[1]
2	Stephen Benca,	Lynn,	Milk (total solids, 11.57).
3	George E. Blake,	Lenox,	Milk (total solids, 11.80).[2]
4	James Breen,	Concord,	Milk (total solids, 9.54).[1]
5	William E. Briggs,	Taunton,	Milk (total solids, 11.20).[1]
6	Bartholomew J. Carroll,	Natick,	Milk (total solids, 10.91).[1]
7	Martin E. Egan,	Pittsfield,	Milk (total solids, 10.52).[1]
8	Robert Evans,	Woods Hole,	Milk (total solids, 10.50).
9	Chas. W. Harris,	Leominster,	Milk (total solids, 10.66).[1,2]
10	John A. Johnson,	North Adams,	Milk (total solids, 10.88).
11	Jacob F. Kirchner,	Dalton,	Milk (total solids, 12.00).[1]
12	Joseph Levitt,	Lynn,	Milk (total solids, 10.80).
13	Frank Loehr,	– –	Milk (total solids, 10.32).[1]
14	Harry Medlyn,	Richmond,	Milk (total solids, 10.32).[1]
15	William McNiff,	Marlborough,	Milk (total solids, 10.60).
16	William McNiff,	Marlborough,	Milk (total solids, 10.80).[1]
17	James McCormick,	Chelmsford,	Milk (total solids, 10.92).[2]
18	James McCormick,	Chelmsford,	Milk (total solids, 10.94).[1]
19	William S. Noble,	Pittsfield,	Milk.[2]
20	Chas. C. Nunn,	Lynn,	Milk (total solids, 11.86).
21	Ernest A. Peck,	Brockton,	Milk (total solids, 10.72).
22	Ernest A. Peck,	Brockton,	Milk (total solids, 10 72).[1]
23	Almon E. Richardson,	Winchester,	Milk (total solids, 10.90).
24	Anthony C. Richardson,	Winchester,	Milk (total solids, 10.90).
25	Frank J. Rooney,	Marlborough,	Milk (total solids, 12 08).
26	Frank J. Rooney,	Marlborough,	Milk (total solids, 12 02).[1]
27	Geo. H. Swift,	Berkley,	Milk (total solids, 11 60).[1]
28	Henry M. Wade,	Stockbridge,	Milk (total solids, 12 00).[1]
29	Edward H. Howard,	Taunton,	Spirit of anise 48% U.S.P.
30	Edward H. Howard,	Taunton,	Spirit of peppermint 68% U.S.P.
31	Fred. W. Putney,	Boston,	Spirit of camphor 42% U.S.P.

[1] Watered. [2] Skimmed. [3] Appealed.

Fines imposed, $618.75.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
10508	Chili sauce, . . .	Libby, McNeill & Libby, Chicago, Ill., ...	Preserved with benzoic acid
10408	New England Tomato Relish.	Skilton, Foote & Co., Boston, Mass., ...	Preserved with benzoic acid.
10657	Nerver, Pure Extract of Tomato.	A. Bauer & Co., Inc., Chicago, Ill., ...	Preserved with benzoic acid.
10649	Potite Maraschino cherries.	– –	Preserved with benzoic acid.
10592	Malto-Grapo, . .	Malto-Grapo Company, Ltd., Paw Paw, Mich., . .	Preserved with salicylic acid.
10656	Joyce's Superior Malt,	Chas. H. Joyce, Lowell, Mass , ...	39.5 per cent. alcohol.
2710 N	Allen's Root Beer Extract.	Chas. E. Carter, Lowell, Mass., ...	15 per cent. alcohol.
10562	Milk, ...	James F. Otis Company, Weymouth, Mass., . . .	Total solids, 10.10 per cent.; fat, 2.60 per cent.; contained added water.
2674 N	Milk, ...	Wm. E. Briggs, Taunton, Mass , ...	Total solids, 11.20 per cent.; fat, 3.60 per cent.; contained added water.
10619	Milk, ...	James McCormick, Chelmsford, Mass., . . .	Total solids, 10.92 per cent.; fat, 3.10 per cent.; contained added water.
10620			Total solids, 10.94 per cent.; fat, 3.20 per cent.; contained added water.
10621			Total solids, 10.91 per cent.; fat, 3.20 per cent.; contained added water.
10622			Total solids, 11.06 per cent.; fat, 3.20 per cent.; contained added water.
10623			Total solids, 11.20 per cent.; fat, 3.30 per cent.; contained added water.
10624			Total solids, 11.20 per cent.; fat, 3.30 per cent.; contained added wator.
10625			Total solids, 10.30 per cent.; fat, 3.30 per cent.; contained added water.
10626			Total solids, 12.12 per cent.; fat, 3.30 per cent.; contained added water.
10627			Total solids, 10.94 per cent.; fat, 3.20 per cent.; contained added water.
1605 R	Milk, ...	Andrew C. Boynton, Lanesborough, Mass., . . .	Total solids, 12.28 per cent.; fat, 4.50 per cent.; contained added water.

q 3841	Milk, ...	Ahron Kasbaian, West Andover, Mass., . . .	Total solids, 10.36 per cent.; fat, 2.90 per cent.; contained added water.
q 3842			Total solids, 10.86 per cent.; fat, 3.25 per cent.; contained added water.
q 3843			Total solids, 10.66 per cent.; fat, 3.30 per cent.; contained added water.
q 3844			Total solids, 11.14 per cent.; fat, 3.25 per cent.; contained added water.
q 3845			Total solids, 11.00 per cent.; fat, 3.35 per cent.; contained added water.
q 3846			Total solids, 10.10 per cent.; fat, 2.60 per cent.; contained added water.
q 3847			Total solids, 10.86 per cent.; fat, 3.30 per cent.; contained added water.
q 3848			Total solids, 11.40 per cent.; fat, 3.50 per cent.; contained added water.
q 3849			Total solids, 10.74 per cent.; fat, 3.10 per cent.; contained added water.
q 3850			Total solids, 11.50 per cent.; fat, 3.80 per cent.; contained added water.
q 3851			Total solids, 11.60 per cent.; fat, 3.70 per cent.; contained added water.
q 3852			Total solids, 11.66 per cent.; fat, 3.80 per cent.; contained added water.
q 3853			Total solids, 11.10 per cent.; fat, 3.30 per cent.; contained added water.
q 3854			Total solids, 11.22 per cent.; fat, 3.55 per cent.; contained added water.
q 3855			Total solids, 10.92 per cent.; fat, 3.60 per cent.; contained added water.
q 3856			Total solids, 11.12 per cent.; fat, 3.55 per cent.; contained added water.

INSPECTION OF DAIRIES.

During the month of October, 1909, 183 dairies in New Hampshire and Vermont, supplying milk for public sale in Massachusetts, were examined, as follows: —

New Hampshire Dairies.

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number to which Letters were sent.	Per Cent.
Antrim,	2	1	50.00	1	50.00
Second inspection,	12	4	33.33	8	66.67
Bennington,	–	–	–	–	–
Second inspection,	2	2	100.00	–	–
Chester,	–	–	–	–	–
Second inspection,	1	–	–	1	100.00
Deering,	–	–	–	–	–
Second inspection,	1	–	–	1	100.00
Derry,	–	–	–	–	–
Second inspection,	9	5	55.56	4	44.44
Francestown,	–	–	–	–	–
Second inspection,	1	–	–	1	100.00
Greenfield,	2	1	50.00	1	50.00
Second inspection,	28	8	28.57	20	71.43
Hancock,	–	–	–	–	–
Second inspection,	18	9	50.00	9	50.00
Hillsborough,	–	–	–	–	–
Second inspection,	7	6	85.71	1	14.29
Hudson,	–	–	–	–	–
Second inspection,	6	5	83.33	1	16.67
Jaffrey,	–	–	–	–	–
Second inspection,	6	3	50.00	3	50.00
Londonderry,	–	–	–	–	–
Second inspection,	12	6	50.00	6	50.00
Pelham,	–	–	–	–	–
Second inspection,	1	1	100.00	–	–
Peterborough,	–	–	–	–	–
Second inspection,	12	10	83.33	2	16.67
Windham,	–	–	–	–	–
Second inspection,	4	2	50.00	2	50.00

Total number of New Hampshire dairies examined,	124
Number found to be free from objectionable conditions,	63
Number to which letters were sent,	61
Total number of conditions to which attention was called,	149
Percentage of dairies which passed inspection,	50.81

Vermont Dairies.

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number to which Letters were sent.	Per Cent.
Barnet,	–	–	–	–	–
Second inspection,	3	2	66.67	1	33.33
Barton,	–	–	–	–	–
Second inspection,	3	2	66.67	1	33.33
Burke,	–	–	–	–	–
Second inspection,	4	2	50.00	2	50.00
Coventry,	–	–	–	–	–
Second inspection,	6	3	50 00	3	50.00
Lyndon,	–	–	–	–	–
Second inspection,	6	2	33.33	4	66.67
Lyndonville,	–	–	–	–	–
Second inspection,	3	2	66.67	1	33.33
Putney,	–	–	–	–	–
Second inspection,	14	10	71.43	4	28.57
St. Johnsbury,	–	–	–	–	–
Second inspection,	2	1	50.00	1	50.00
Sutton,	–	–	–	–	–
Second inspection,	8	1	12.50	7	87.50
Westminster,	5	2	40.00	3	60.00
Second inspection,	5	2	40.00	3	60.00

Total number of Vermont dairies examined, ... 59
Number found to be free from objectionable conditions, ... 29
Number to which letters were sent, ... 30
Total number of conditions to which attention was called, ... 81
Percentage of dairies which passed inspection, ... 49.15

ANTERIOR POLIOMYELITIS.

At a meeting of the State Board of Health, held on Nov. 4, 1909, it was voted that anterior poliomyelitis (infantile paralysis) be declared a disease dangerous to the public health, and therefore notifiable under sections 49 and 50 of chapter 75 of the Revised Laws.

JOYCE'S BRAND SUPERIOR MALT.

Proprietary preparation advertised as unsalable in October, 1909, Joyce's Brand Superior Malt, Chas. H. Joyce, 31 Central Street, and 5 to 15 Middle Street, Lowell, Mass. No statement of the percentage of alcohol.

WHAT IS DISEASED MEAT, AND WHAT IS ITS RELATION TO MEAT INSPECTION?[1]

By Professor Theobald Smith, Boston, Mass.

There has been recently discovered, more or less accidentally, a law among the statutes of this Commonwealth which has been interpreted as prohibiting the sale of meat from animals affected with local disease of however slight a character. This law is in conflict with the long-standing, well-tried and reasonable regulations of the United States concerning meat destined for interstate traffic. Under these circumstances I have been asked to introduce here a discussion on the text of disease and its relation to the inspection of meat. While turning the subject over in my mind I came to the conclusion that a general statement of the principles which should control the meat traffic would perhaps serve our purpose better than a discussion of a few kinds of affections which are specially hit by our present law. These can be taken up in the subsequent discussion by others.

The subject is in its larger bearings essentially a question of waste *versus* economy. The discovery of waste and its utilization marks many epochs in our material progress. We are everywhere beginning to see waste towards which we have been blind hitherto. To discover it means to utilize it. The enlightenment of any nation or community may be measured by its adjustment of means and ends to one another. If there is much waste in attaining a certain end, intelligence is low, for human ends defeat themselves through loss of energy and resources.

Science furnishes us the insight needed to accurately adjust means and ends to each other. If science is worth anything to civilization, it is in creating new values, making new classifications, transforming crude into more refined distinctions, and leading us from emotional to rational states of mind which enable us to reconstruct the material world for better uses. Our present civilization is largely constructed out of what our savage forbears thought worthless, and in each successive step man has taken up something ignored or rejected by his predecessors. Without this process of readaptation and re-discovery advance would be impossible.

While science is building up, there is going on a continual tearing down, and our onward movement is measured neither by one nor by the

[1] Reprinted from the American Journal of Public Hygiene for May, 1909. Read at a quarterly meeting of the Massachusetts Association of Boards of Health, held April 29, 1909.

other process, but by the difference between the two. It is often difficult to decide which process is more active. It is becoming evident on all sides that through unmeasured waste of resources we have been exhausting our material capital, whereas we should be living only on our income. A sense of obligation to our posterity, which also is a measure of enlightenment, should induce us to come down to our income as soon as possible.

Unfortunately, the method of equalizing losses through insurance of various kinds, pensions and taxes, shuts our eyes to the fact that every time property of any kind is destroyed by fire or otherwise it is absolutely lost. The community and the nation are by so much poorer. We have irrecoverably lost so much capital.

Among our material resources our food supply represents both capital and income. It stands for capital in so far as we are withdrawing the nutritive elements from the soil in the food we raise, without always restoring them to the soil in some other form.

Flesh foods are among the most expensive of our food products. They represent the concentrated energy of vegetable foods made over by the animal body. During this transformation there is much loss of energy, some of which in the best kind of agriculture is promptly returned to the soil as fertilizer to maintain soil fertility. The modern world is addicted to the use of flesh foods. The great uninhabited territories of the western hemisphere have furnished for many years a rich supply to the entire world. This source is slowly drying up as agriculture takes up the land, and gradually the raising of food-producing animals will have to become diffused and form an integral part of agriculture everywhere. In other words, we shall have to look for a developing, local, domestic supply, as is the case in European countries.

The influence of such a change — from the great herds and flocks of the far west to the small numbers on the small farms everywhere — on the incidence of animal diseases will be marked. The great collections of animals on the prairies and uplands have been relatively free from disease. Few, if any, animals have been introduced there. The movement has been chiefly outward. Hence the chance for the introduction of disease has been slight. Parasitic diseases have been common in places, but the great plagues, unless indigenous and perpetuated in the soil, have been absent.

The domestic animals on the ordinary farm are in a somewhat different situation. There is more intercourse among the farmers and more movement among the animals themselves. This is especially true among dairy herds. Farmers while attempting to improve their stock often introduce infectious diseases. The country fairs and shows contribute

much to the dissemination of animal plagues. The farm animals are furthermore subjeet to various aeeidents and to minor ailments, because they are overfed, overbred and underexposed to the healthful influenees of air and sunlight. They are not so treated that the vitality of the speeies is likely to remain on a level. It will surely deeline, and even if we finally sueeeed in suppressing one plague, such as tubereulosis, another will in due time take its plaee, to thrive on the unnatural eonditions, unless we replaee them by sueh as are more normal, physiologieal.

In view of the many possibilities of disease, both infeetious and noninfectious, which the future has in store for our food-produeing animals, we must therefore strive to maintain as far as possible the physieal integrity of our domestie animals both by preventing infection and by raising their natural resistanee to disease. In the meantime, we must determine as far as possible through seientifie means what pathologieal states of animals are dangerous to human health when the flesh is used as food. This is a eomplieated problem, for there are inextrieably interwoven in it sanitary, esthetie and financial considerations, more or less in confliet with one another.

Taking first the sanitary aspect as the most important, let us endeavor to define under what conditions animals yield diseased meat. Here we must distinguish at the outset between diseases whieh are infectious, *i.e.,* due to baeteria or animal parasites, and those whieh are not. Among the infectious diseases we must make a further distinction between those whieh are and which are not transmissible to man. Constitutional diseases not referable to infectious or parasitic agents are relatively uncommon, for our food-produeing animals are as a rule killed at an early stage in life, before deerepitude or the diseases of declining life, so eommon among human beings, have a ehanee to show themselves. I shall therefore refer to sueh diseases only casually. We are really concerned with infeetious and parasitie diseases, for infeetions usually seize upon diseased states. They move in when health moves out, and they usually terminate life by grafting themselves on pathologieal eonditions.

An examination of the field of animal pathology shows that we actually have few ideally healthy animals. It is hardly to be expeeted that we should have. The abnormalities eneountered are of many kinds, ranging from the mere earriers of germs to various stages of loeal and general diseases. Thus we find in the mueus from the throats of animals baeteria whieh kill rabbits and guinea pigs inoculated with this mueus. If we should injeet a syringeful of blood from a healthy cow in the southern States into a cow living in our own State, we should produee an infectious disease probably fatal. In the intestines of animals are found baeilli of tetanus and botulism and malignant œdema. In the winter, infectious

skin diseases may be seen on cattle otherwise in good condition. In certain regions actinomycosis of the jaw and tongue, or even of the udder, is not uncommon. Most cows after they have reached a certain age will show signs of recent or old tuberculosis.

Again, animals not infrequently suffer from injuries which open the way for bacteria. Cows are apt to swallow pieces of baled-hay wire, hair pins, safety pins, nails, etc. In some cases these pierce the walls of one of the stomachs, and produce foul-smelling abscesses in the immediate neighborhood of this organ. Sometimes the infection extends to the liver. I have seen pieces of baled hay wire in various stages of migration from stomach to heart. Some years ago there were reported cases of cancer of the nictitating membrane of the eyes of cattle, due probably to injury of some kind. Remains of pneumonia and pleurisy, peritonitis, former fractures of ribs and limbs are not uncommon. Animal parasites are usually present in the walls of the stomach and intestines and elsewhere. There is probably not a cow in existence which does not have sarcosporidia in its muscles, filaria in abdomen or blood. The variety of such parasites increases as we approach warmer climates.

If, therefore, we should reinforce the naked-eye examination with the microscope, we should find still fewer ideally perfect creatures. None of the conditions I have mentioned would be considered harmful or objectionable, with a sane rational meat inspection service in operation.

Among the infectious and parasitic diseases which are transmissible to man we may mention anthrax, glanders, rabies, foot-and-mouth disease, tuberculosis, septicæmia and pyæmia, paratyphoid infections and trichinosis. The flesh of animals affected with these diseases is not known to be dangerous to man after thorough cooking, if we except those affections due to the group of paratyphoid or paracolon bacilli. This statement has a broad historical basis, for in centuries past flesh from animals thus affected was frequently or even regularly consumed. Each disease has to be considered by itself, if we wish to single out and define the danger to man. The real danger in such diseases as anthrax, rabies and glanders lurks in the handling of the carcass and the uncooked meat by unsuspecting purchasers, and in the further dissemination of the specific infection. Hence all traffic in any or all portions of carcasses affected with these diseases is prohibited, and the slaughter of animals in which such diseases are recognized during life is forbidden, for obvious reasons. Trichinous pork is harmless to manipulation, but highly dangerous as an uncooked food. Certain infectious diseases of animals not transmissible to man may be highly contagious to live stock in general, and traffic in infected meat is forbidden on this account.

Perhaps the two animal affections which have caused the greatest harm

to man through the food are trichinosis and various septic diseases of cattle associated with typhoid-like bacteria. Trichinosis is eliminated by boiling the meat, but boiling has not in all cases destroyed the dangers arising from the second group of infections.

Passing from these acute, generalized infectious diseases to the localized chronic types, we reach a borderland between the so-called normal, healthy or sound, and diseased meat.

For example, actinomycosis may remain localized in some part or organ situated more or less superficially, and the animal persist in a normal state of nutrition. The local affection may nowise disturb the physiological activities. In tuberculosis the earliest lesions are situated in lymphnodes associated with lungs or mesentery or throat, or all combined; but the condition of the animal may be excellent. Where a rational meat inspection service exists, such animals are considered sound, and for good and sufficient reasons. Only where such localized diseases have overstepped certain well-defined bounds may we entertain a suspicion that perhaps the meat might not be absolutely free from the bacteria of the disease.

Of all the primarily local affections which may attack our cattle, tuberculosis seems at present singled out for the sharpest attack. Yet, of all the localized diseases, there is none which is less objectionable to me than cases of primary tuberculosis of slight or moderate degree as sources of beef. The more localized a disease and the slower its progress, the better protected are the other organs through a slow development of immunity. The animal body is a large and complex community, and disturbance in one place does not mean a general panic. Diseased conditions may thus be represented by gradations from the slightest local to the severest general disorders; from the most harmless to the most dangerous types of generalized disease. In any case the danger is greatly reduced, if not destroyed, by cooking. The danger in handling the uncooked article also varies according to the bacteria or parasites involved. With such a complicated situation before us, it is obvious that it cannot be simplified by resorting to a town meeting vote, but must be treated scientifically.

Turning now to æsthetic considerations, we may maintain that it is disagreeable to think of eating the flesh of any animal which had the slightest blemish anywhere. Perhaps it is, but under the domination of this feeling we are better off to cast our lot with vegetarians. It is often easier to school our common sense and reason in such matters than our instinctive feelings; they usually win the victory. Such feelings, however, are possessed in widely different degrees by different nationalities. For example, horse flesh is used extensively on the continent of Europe. In Saxony, dogs are slaughtered for food.

Peculiar and contradictory conditions prevail in different countries, partly as a result of certain ingrained customs and habits. Pork is not inspected for trichinæ in this country, because it has at no time appeared very necessary to do so to protect public health against these parasites. Yet now and then cases occur, and autopsies and dissections have shown that up to 5 per cent. of human beings in our country have been infected at one time or another. On the other hand, Germany has established an extensive inspection service to detect trichinous pork, since more pork is consumed there than beef. The reason for this extensive service, which included in 1904 28,000 employees, is found in the fact that pork is frequently consumed uncooked. Severe and highly fatal epidemics have occurred, which made this protective machinery necessary.

Contradictory customs and habits prevail among civilized nations with reference to bacteria themselves. I stated above that probably very few bona fide disease germs are dangerous when eaten in cooked foods. Yet there is a tendency to go to extremes, to avoid the possibility that any infection may be contained in the flesh, even though such infection unheated may be absolutely harmless to human beings. On the other hand, we take up to one-half million bacteria per cubic centimeter or fifteen million per ounce in milk. Here we find microbes of all kinds and sizes, and of various shades of pathogenic and toxic power. We eat large numbers of bacteria in raw oysters during April, September and October of the open season. We seed our milk with lactic acid bacilli, and incubate it so that billions may develop in it for curative purposes. Finally, we ourselves are no strangers to bacteria. They occur on all mucous membranes, and they make up about one-third the weight of the dried contents of the large intestine. They have even become beneficial, under certain conditions. The subcutaneous injection of dead bacilli of various diseases promises to become an important means of not only increasing our resistance to disease, but even of curing us of persistent, longstanding bacterial affections. Some years ago Von Behring hoped to obtain from cows highly immunized against tuberculosis, by the injection of the products of tubercle bacilli, milk which through its protective antitoxins might become a valuable curative agent. The hope has not yet been realized.

These illustrations will suffice to show that our objection to meat coming from animals not perfectly sound or healthy, leaving aside those diseases transmissible to man, is largely based on æsthetic rather than on sanitary considerations, and that our daily actions are hopelessly contradictory.

As a result of this state of affairs, we find the inspection of meats governed by different regulations in different countries. Thus, the meat inspection laws of Germany are far less exclusive, but at the same time

more highly developed and worked out in minuter detail than in any other country. Diseased meat is there defined solely in accordance with its potential danger to the health of human beings and to other still healthy domestic animals. Meat is classed as utilizable, non-utilizable and of inferior grade. A fourth class is created, which is utilizable only under certain restrictions. These are, that it be sold after sterilization, at a lower price, and only in small quantities to any one purchaser. A certain percentage of animals which the United States inspector now condemns is utilizable in Germany. A larger percentage which he condemns is utilizable there under the restrictions mentioned. It having been learned that the flesh of animals affected with various types of pneumonia is harmless and not reduced in nutritive value, such flesh is classed as utilizable. About 1 per cent. of all animals are slaughtered because affected with diseases which induce the owners to dispose of them. If after inspection no reason exists for imputing any harmful qualities to the flesh, it is sold either with or without restrictions, according to the nature of the case. I might give other examples of the operations of the German law, but they will suffice to show that the grading of meat is based on harmlessness and nutritive value, and that it is determined by rigidly scientific means. Moreover, medical history has demonstrated, through great self-imposed experiments of the human race in earlier times, that flesh from most diseases is harmless if eaten after thorough cooking.

Coming now to our own situation, the question arises, Where shall we draw the line? Who shall define it? What rulings will redound to the advantage of the masses of the people? These questions are difficult to answer. They involve individual and racial prejudices and grave financial problems. Any answer whatever presupposes in the first place thorough inspection of all meats destined for human consumption by trained inspection.

A set of complicated meat inspection regulations can be handled only by scientifically trained inspectors. The regulations are based upon what we know of the usual course of the disease, the behavior of disease germs within and without the body of the affected animal, their capacity for producing toxins, the nature of these toxins, and the natural immunity of the various tissues of the animal. No one but a well-trained veterinary graduate can be trusted to interpret such regulations. It may be stated truthfully that most intelligent, experienced butchers can distinguish normal meat from low-grade abnormal meat. They can tell whether an animal has diseased parts or organs, but there their usefulness ends. They cannot be expected to recognize localized tuberculosis, for example, and differentiate it from the generalized or advanced

stages. Their judgment would be of little value in distinguishing local suppurative from general septic conditions. The trained inspector's function is to save meat wherever that can be done, rather than to reject it. The process of rejection is easy enough. It does not require technical training. It would not take long for one skilled in judging form, consistency and color to detect the ideally healthy animal. But there would be little meat handled and sold after his inspection, if every minor blemish were counted against the animal. This is not what we can afford.

With the aid of trained inspectors it would be possible to satisfy various groups of people by classifying meat as is now done in Germany. The healthfulness of the article sold should be guaranteed by municipal, State or national inspection, and the quality defined in accordance with other standards. It can then be left to the buyer to decide whether he wishes beef from ideally sound animals according to our present Massachusetts law at $1 to $1.50 a pound, or the article as passed by United States inspectors at 30 cents, perhaps. He should also be permitted under certain restrictions to buy beef from animals certain organs or parts of which have been rejected as diseased, at say 12 cents a pound. He should even have the opportunity to buy sterilized meat at 7 cents, if he wishes it. Though we may be still some distance from the point where meat will be so classified and sold, yet I think we are moving toward it. With the growth of the domestic live stock industry we shall be forced to follow the older countries, who have had to work this problem out for themselves. Without educated inspectors this cannot be done safely.[1]

A rational meat inspection service is the best which veterinary medicine can give to practical life. Some of the most conspicuous German veterinary scientists started as meat inspectors. It gives material for a life-long study of diseased conditions. The inspector, like the physician, must always be prepared to meet hitherto unknown pathological combinations.

[1] That our national regulations are not perfect is shown by the following exemption of farmers products: — "Section 14. When any cattle, sheep, swine or goats have been slaughtered by any farmer on the farm, and the carcasses, parts of carcasses, or meat products thereof are offered to any common carrier for transportation from one State or Territory or the District of Columbia to another State or Territory or the District of Columbia, the common carrier may so transport such carcasses, parts of carcasses, or meat food products as long as the same may be identified as of animals slaughtered by any farmer on the farm."

The shipper is required to certify that such meat products are "sound, healthful, wholesome and fit for human food," etc. How "any farmer on the farm" is always able to tell us that his animals were sound, wholesome and fit for human food is somewhat beyond my comprehension. This section must be classed among those clauses which occasionally find their way into our laws and which seem to suspend the operation of the entire law in which they appear. This is evidently a sop to "the farmer on the farm." If such products were to be consumed by the farmer himself or in his household, it might perhaps be unreasonable to compel him to submit his products to inspection.

One who inspects animals reared in New England has much to learn if he should be transferred to the south or to the west. Each territory has its own disease problems, in addition to the common, universal ones.

In the final shaping of our meat inspection the economic or financial aspect of the whole problem will be of no small importance. It is obvious that the strictness with which animals locally or slightly diseased are eliminated from the meat supply will eventually be governed by the law of supply and demand. When we are very hungry, we are much less squeamish about our food than when our tissues are continuously supersaturated with the daintiest that can be supplied. If our meat supply becomes a diminishing quantity our laws will sooner or later relax, and we shall come down more and more to the question of healthfulness, irrespective of other considerations.

A rational meat inspection law will also aid the farmer in improving his stock and weeding out unsatisfactory animals. If we should exclude entirely from the market beef from cattle affected with primary tuberculosis of the lymph nodes or other organs in early or arrested stages, it would prove a serious obstacle to any further purification of our dairy herds from this disease. If the owner finds that all animals reacting to tuberculin are to be condemned as unfit for food, he will think twice before undertaking the complete elimination of tuberculosis. While we may be taking tubercle bacilli in raw milk, we are vigorously opposed to the barest suspicion of having to take a stray dead bacillus in cooked beef. With a proper inspection the chance of any infection of the meat in the cases mentioned is extremely small, and the chance of any human infection from this meat infinitely smaller.

In the final adjustment we shall also learn that with a growing domestic supply of animals destined for food, public abattoirs will be necessary to properly carry out the regulations pertaining to the safeguarding of flesh foods. Small communities will have to band together and build sanitary slaughter-houses, and forbid the use of small, private, usually filthy, killing places. Only in large municipal plants can well-trained, well-paid inspectors be fully utilized. The cost of properly inspecting numerous small establishments would be prohibitory, and such inspection would have to be consigned to untrained, incompetent hands, with the result that the safeguarding and proper valuation of the product would be highly unsatisfactory under any law. It will be claimed that any attempt at classifying meat products will fail, because lower-grade meats, like oleomargarine, for example, may become the means of deception, misrepresentation and fraud. It will also be claimed that the people will refuse to buy lower-grade meats. The first objection can, I think, be met by carefully limited sales. The second claim will probably prove to be unfounded if the healthfulness of the meat is

safeguarded by a non-political, rigidly civil-service meat inspection force. Until that time comes, we are all of us likely to eat at some time or other third-class meat, bought at first-class prices, even under a drastic law.

On the whole, we have no moral right to withhold a valuable food product because there stands in the way certain popular misconceptions. Our æsthetic sense is purely subjective, depending on individual and racial characters. It would be autocratic to attempt to embody in statutes the attitude of the most fastidious. Individuals should be free to choose, and not be burdened by the subjective prejudices of others. In the case of our milk supply, standards based on nutritive values are becoming insignificant as compared with hygienic standards; so, with meat, the nutritive and æsthetic values will have to give way to standards measuring freedom from disease-producing elements. I do not mean that we should not establish and enforce standards of nutritive values, but they must not be permitted to overshadow the steadily growing importance of hygienic standards forced upon us by the increasing complexity of every-day life.

In conclusion, let me summarize the principles I have endeavored to bring before you as follows: —

1. There are few animals either ideally sound or wholly free from disease germs or parasites.

2. The line to be drawn between normal and suspicious or infected meat is not absolutely fixed, but depends on the nature and stage of the disease process.

3. In very few diseased conditions would the thoroughly cooked meat, if eaten, produce disease in man.

4. Animals affected with certain diseases are rejected in toto because the handling may infect man or disseminate the disease. Animals affected with other diseases are rejected partly because our general standards of healthy meat are relatively high, partly because such diseases may be disseminated by the meat and infect other animals.

5. The proportion of harmless meat from diseased animals excluded from consumption in the future will probably depend more or less on the relative scarcity of meat. With the shrinking of supplies we may eventually approximate the regulations now in force in Germany, which permit a larger freedom in the use of meat from diseased animals than we do.

6. Proper inspection demands well-trained inspectors, and these are most economically employed in large public abattoirs.

7. To utilize our meat products most efficiently they should be classified, and meat from certain diseased animals now rejected entirely should be sold under suitable restrictions after sterilization.

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WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS OF MORE THAN 10,000 POPULATION.

WEEK ENDING NOV. 6, 1909.

CITIES AND TOWNS.	Population.[1] Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	216	46	77	30	31	3	–	2
Worcester,	136,476	32	9	9	5	1	2	–	–
Fall River,	106,486	47	24	23	6	4	–	1	–
Cambridge,	102,112	31	7	13	4	6	1	–	–
Lowell,	96,380	38	11	10	2	5	3	–	–
New Bedford,	85,516	30	17	12	3	2	–	1	–
Lynn,	84,623	15	4	2	–	1	–	–	–
Springfield,	84,237	22	2	8	4	1	1	–	–
Lawrence,	78,000	31	10	8	5	–	–	1	–
Somerville,	76,049	14	6	8	3	–	–	1	–
Brockton,	55,039	13	3	4	1	1	–	–	–
Holyoke,	53,590	17	5	5	2	2	–	–	–
Malden,	41,941	6	1	2	–	1	–	1	–
Chelsea,	40,080	6	3	1	–	1	–	–	–
Newton,	39,642	12	2	1	–	–	–	–	–
Salem,	39,019	6	2	2	2	–	–	–	–
Haverhill,	38,362	11	3	1	–	–	–	–	–
Fitchburg,	34,263	14	1	1	–	1	–	–	–
Everett,	33,597	8	1	3	–	3	–	–	–
Quincy,	31,937	6	0	3	–	1	–	1	–
Taunton,	30,967	20	5	9	8	–	–	1	–
Waltham,	28,761	9	0	–	–	–	–	–	–
Pittsfield,	27,932	7	1	1	1	–	–	–	–
Brookline,	26,674	6	–	2	1	–	–	–	–
Gloucester,	26,011	3	–	–	–	–	–	–	–
North Adams,	22,150	6	2	–	–	–	–	–	–
Northampton,	21,075	6	1	–	–	–	–	–	–
Chicopee,	21,049	12	7	3	1	1	–	–	–
Medford,	20,921	8	1	2	–	2	–	–	–
Beverly,	16,386	7	3	2	–	–	–	–	–
Leominster,	16,030	6	2	1	–	–	–	–	–
Hyde Park,	15,609	3	2	1	1	–	–	–	–
Melrose,	15,459	2	0	1	1	–	–	–	–
Newburyport,	14,834	4	2	4	2	–	2	–	–
Revere,	14,820	1	–	–	–	–	–	–	–
Westfield,	14,750	3	1	–	–	–	–	–	–
Woburn,	14,522	3	0	1	1	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	7	0	–	–	–	–	–	–
Attleborough,	13,913	5	2	1	–	1	–	–	–
Adams,	13,685	0	–	–	–	–	–	–	–
Clinton,	13,105	5	1	–	–	–	–	–	–
Gardner,	13,066	8	4	2	1	–	–	1	–
Milford,	12,722	1	0	–	–	–	–	–	–
Watertown,	12,676	2	1	1	1	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	2	1	1	–	1	–	–	–
Weymouth,	11,798	3	0	–	–	–	–	–	–
Framingham,	11,749	7	1	1	–	–	–	–	1
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	3	–	–	–	–	–	–	–
Greenfield,	10,140	1	–	1	1	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,379,468	725	194	227	86	66	12	8	3

[1] The populations were estimated upon the rate of growth from 1900 to 1905. Those of Taunton, Gloucester, North Adams and Clinton were allowed to stand as in 1905, having shown no increase during the five-year period. The gain in the population of Lowell is due to the annexation of a part of the town of Tewksbury. The population of Lawrence by the census of 1905 was 70,050, but, owing to the building of the new Wood and Arlington mills, an increase of about 8,000 is estimated by the Lawrence Board of Health, or 78,000.

WEEK ENDING NOV. 13, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	173	42	56	18	11	3	6	1
Worcester,	136,476	37	8	10	7	1	–	–	–
Fall River,	106,486	36	18	15	6	1	–	1	–
Cambridge,	102,112	35	9	15	5	7	1	–	–
Lowell,	96,380	19	5	4	4	–	–	–	–
New Bedford,	85,516	28	12	9	2	–	–	3	–
Lynn,	84,623	23	6	4	2	2	–	–	–
Springfield,	84,237	30	7	9	8	–	–	–	–
Lawrence,	78,000	25	12	11	4	5	1	–	–
Somerville,	76,049	26	3	6	3	1	–	1	–
Brockton,	55,039	15	3	4	1	3	–	–	–
Holyoke,	53,590	9	3	1	1	–	–	–	–
Malden,	41,941	10	2	2	2	–	–	–	–
Chelsea,	40,080	10	3	2	–	–	1	1	–
Newton,	39,642	10	–	3	2	1	–	–	–
Salem,	39,019	11	1	3	2	1	–	–	–
Haverhill,	38,362	9	–	–	–	–	–	–	–
Fitchburg,	34,263	10	3	4	2	1	1	–	–
Everett,	33,597	8	1	–	–	–	–	–	–
Quincy,	31,937	12	5	4	2	2	–	–	–
Taunton,	30,967	15	2	10	4	5	–	1	–
Waltham,	28,761	5	1	2	2	–	–	–	–
Pittsfield,	27,932	6	1	2	1	–	–	1	–
Brookline,	26,674	7	–	2	–	–	–	–	–
Gloucester,	26,011	5	1	2	–	2	–	–	–
North Adams,	22,150	4	2	3	2	–	–	1	–
Northampton,	21,075	4	0	–	–	–	–	–	–
Chicopee,	21,049	3	0	1	1	–	–	–	–
Medford,	20,921	5	2	2	1	1	–	–	–
Beverly,	16,386	5	–	–	–	–	–	–	–
Leominster,	16,030	2	1	–	–	–	–	–	–
Hyde Park,	15,609	2	–	–	–	–	–	–	–
Melrose,	15,459	5	0	2	–	2	–	–	–
Newburyport,	14,834	6	–	2	1	1	–	–	–
Revere,	14,820	2	–	1	–	–	–	1	–
Westfield,	14,750	1	–	–	–	–	–	–	–
Woburn,	14,522	5	1	–	–	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	6	1	2	1	1	–	–	–
Attleborough,	13,913	5	0	–	–	–	–	–	–
Adams,	13,685	3	–	2	1	1	–	–	–
Clinton,	13,105	6	2	–	–	–	–	–	–
Gardner,	13,066	4	0	1	–	1	–	–	–
Milford,	12,722	3	2	1	–	–	–	–	–
Watertown,	12,676	8	0	1	1	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	3	2	1	1	–	–	–	–
Weymouth,	11,798	1	0	–	–	–	–	–	–
Framingham,	11,749	4	2	2	2	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	3	–	1	–	–	–	1	–
Greenfield,	10,140	1	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,379,468	665	161	202	89	52	7	17	1

WEEK ENDING NOV. 20, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	175	32	54	24	12	5	1	1
Worcester,	136,476	39	9	15	10	3	–	–	–
Fall River,	106,486	28	13	11	2	3	–	–	–
Cambridge,	102,112	27	7	9	3	3	3	–	–
Lowell,	96,380	25	10	6	2	2	1	1	–
New Bedford,	85,516	27	11	10	5	–	–	–	–
Lynn,	84,623	25	5	6	4	2	–	–	–
Springfield,	84,237	29	10	11	2	1	5	–	–
Lawrence,	78,000	12	6	5	3	–	1	–	–
Somerville,	76,049	18	3	7	2	3	1	–	–
Brockton,	55,039	10	5	2	1	–	–	–	–
Holyoke,	53,590	12	10	6	3	–	2	–	–
Malden,	41,941	11	2	4	2	2	–	–	–
Chelsea,	40,080	13	2	2	–	1	–	–	–
Newton,	39,642	6	2	2	2	–	–	–	–
Salem,	39,019	7	2	4	1	1	–	1	–
Haverhill,	38,362	17	1	1	–	1	–	–	–
Fitchburg,	34,263	14	4	2	1	–	1	–	–
Everett,	33,597	9	2	–	–	–	–	–	–
Quincy,	31,937	5	1	2	–	2	–	–	–
Taunton,	30,967	18	2	6	3	2	–	1	–
Waltham,	28,761	8	–	2	2	–	–	–	–
Pittsfield,	27,932	6	–	3	3	–	–	–	–
Brookline,	26,674	8	–	2	2	–	–	–	–
Gloucester,	26,011	8	1	4	–	3	–	–	–
North Adams,	22,150	7	4	–	–	–	–	–	–
Northampton,	21,075	10	–	1	1	–	–	–	–
Chicopee,	21,049	4	3	2	1	1	–	–	–
Medford,	20,921	3	1	–	–	–	–	–	–
Beverly,	16,386	7	2	2	2	–	–	–	–
Leominster,	16,030	1	–	–	–	–	–	–	–
Hyde Park,	15,609	5	0	1	–	–	–	–	–
Melrose,	15,459	5	0	–	–	–	–	–	–
Newburyport,	14,834	2	–	–	–	–	–	–	–
Revere,	14,820	4	3	1	1	–	–	–	–
Westfield,	14,750	4	1	1	–	–	–	–	–
Woburn,	14,522	7	1	3	1	1	1	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	4	0	2	1	1	–	–	–
Attleborough,	13,913	4	0	–	–	–	–	–	–
Adams,	13,685	8	2	3	1	1	–	–	–
Clinton,	13,105	3	–	–	–	–	–	–	–
Gardner,	13,066	7	0	–	–	–	–	–	–
Milford,	12,722	1	0	1	1	–	–	–	–
Watertown,	12,676	2	–	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	1	–	–	–	–	–	–	–
Weymouth,	11,798	5	0	–	–	–	–	–	–
Framingham,	11,749	4	3	1	–	–	1	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	3	–	1	–	–	–	–	–
Greenfield,	10,140	3	–	–	–	–	–	–	–

Recapitulation.

Total of reporting towns,	2,379,468	661	160	195	86	45	21	4	1

WEEK ENDING NOV. 27, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	191	42	74	31	25	2	2	2
Worcester,	136,476	41	11	10	6	2	2	–	–
Fall River,	106,486	41	17	22	8	6	1	1	–
Cambridge,	102,112	23	8	7	3	2	1	–	–
Lowell,	96,380	37	12	7	4	3	–	–	–
New Bedford,	85,516	31	13	7	3	2	–	–	–
Lynn,	84,623	30	5	8	3	3	1	1	–
Springfield,	84,237	33	7	10	3	3	–	1	–
Lawrence,	78,000	26	12	10	4	4	1	–	–
Somerville,	76,049	20	5	5	1	1	–	1	–
Brockton,	55,039	20	4	3	1	2	–	–	–
Holyoke,	53,590	25	8	6	2	2	–	–	–
Malden,	41,941	5	1	1	–	–	–	–	–
Chelsea,	40,080	16	2	4	–	1	1	1	–
Newton,	39,642	7	1	–	–	–	–	–	–
Salem,	39,019	9	5	3	2	–	–	–	–
Haverhill,	38,362	8	2	3	2	1	–	–	–
Fitchburg,	34,263	11	5	2	2	–	–	–	–
Everett,	33,597	8	1	3	–	2	1	–	–
Quincy,	31,937	10	2	1	1	–	–	–	–
Taunton,	30,967	12	4	4	1	2	–	–	–
Waltham,	28,761	5	0	–	–	–	–	–	–
Pittsfield,	27,932	4	1	–	–	–	–	–	–
Brookline,	26,674	7	–	–	–	–	–	–	–
Gloucester,	26,011	5	2	–	–	–	–	–	–
North Adams,	22,150	5	2	2	–	1	–	–	–
Northampton,	21,075	5	1	–	–	–	–	–	–
Chicopee,	21,049	5	2	3	–	2	1	–	–
Medford,	20,921	2	–	–	–	–	–	–	–
Beverly,	16,386	3	–	–	–	–	–	–	–
Leominster,	16,030	8	2	3	2	–	–	–	–
Hyde Park,	15,609	3	–	2	1	1	–	–	–
Melrose,	15,459	2	0	–	–	–	–	–	–
Newburyport,	14,834	7	–	2	2	–	–	–	–
Revere,	14,820	5	–	2	–	1	–	–	–
Westfield,	14,750	2	–	1	1	–	–	–	–
Woburn,	14,522	5	–	2	1	1	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	3	0	2	1	1	–	–	–
Attleborough,	13,913	2	0	1	1	–	–	–	–
Adams,	13,685	4	1	–	–	–	–	–	–
Clinton,	13,105	5	1	1	–	–	–	–	–
Gardner,	13,066	4	0	–	–	–	–	–	–
Milford,	12,722	3	1	1	–	–	1	–	–
Watertown,	12,676	7	3	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	4	1	1	1	–	–	–	–
Weymouth,	11,798	5	0	2	1	1	–	–	–
Framingham,	11,749	3	1	1	–	1	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	4	–	1	–	–	–	–	–
Greenfield,	10,140	2	–	–	–	–	–	–	–

Recapitulation.

Total of reporting towns,	2,379,468	723	185	217	88	70	12	7	2

WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.

DEATHS FROM INFECTIOUS DISEASES NOT SPECIFICALLY MENTIONED IN ABOVE TABLES DURING THE WEEKS OF NOV. 6, 13, 20 AND 27, 1909.

DISEASE.	Place.	WEEK ENDING —			
		Nov. 6.	Nov. 13.	Nov. 20.	Nov. 27.
Cerebro-spinal meningitis,	Boston,	–	1	2	1
	Springfield,	–	–	–	1
	New Bedford,	–	1	–	–
	Westfield,	–	–	1	–
	Worcester,	–	1	1	–
Scarlet fever,	Boston,	1	1	–	–
	Chelsea,	–	–	1	–
	Chicopee,	1	–	–	–
	Fall River,	–	–	1	–
	Gardner,	–	–	1	–
	Lynn,	1	–	–	–
	New Bedford,	2	–	1	–
	Newton,	1	–	–	–
	Springfield,	–	–	1	–
Whooping cough,	Boston,	1	1	–	–
	New Bedford,	–	–	1	–
	Springfield,	–	–	1	–
Erysipelas,	Boston,	–	–	–	1
	Cambridge,	–	1	–	–
	Springfield,	–	–	–	1
Tuberculosis other than pulmonary.	Arlington,	–	–	1	1
	Boston,	–	8	2	1
	Brockton,	1	–	–	–
	Brookline,	1	2	–	–
	Cambridge,	–	1	–	–
	Chelsea,	–	–	–	1
	Haverhill,	1	–	–	–
	Lawrence,	1	–	–	–
	Milford,	–	1	–	–
	North Adams,	–	–	–	1
	Revere,	–	–	–	1
	Salem,	–	–	1	1
	Somerville,	1	–	–	–
	Springfield,	1	–	1	–
Influenza,	Boston,	–	–	1	1
	Hyde Park,	–	–	1	–
	Springfield,	–	–	–	1
Meningitis other than cerebro-spinal.	Malden,	–	–	–	1
	Gloucester,	–	–	1	–
Anterior poliomyelitis,	Quincy,	1	–	–	–

WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

CASES OF INFECTIOUS DISEASES REPORTED DURING THE WEEKS OF NOV. 6, 13, 20 AND 27, 1909.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	WEEK ENDING —			
	Nov. 6.	Nov. 13.	Nov. 20.	Nov. 27.
Diphtheria,	209	218	234	214
Measles,	127	203	144	214
Scarlet fever,	131	127	145	131
Typhoid fever,	75	82	77	52
Tuberculosis, pulmonary,	183	139	144	125
Cerebro-spinal meningitis,	2	2	5	1
Whooping cough,	10	17	17	14
Varicella,	33	37	57	60
Erysipelas,	–	–	–	–
Mumps,	–	–	2	1
Ophthalmia neonatorum,	3	3	1	2
Tuberculosis other than pulmonary,	–	1	3	–
Trachoma,	1	–	–	–
Tetanus,	2	–	–	–
Anterior poliomyelitis,	–	1	–	4
Malignant pustule,	–	–	1	–

MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of November, 1909: —

ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	ARTICLES EXAMINED.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Butter,	4	–	4	Maple syrup,	2	–	2
Canned fruit and vegetables,	4	–	4	Meat products,	17	–	17
Cheese,	1	–	1	Hamburg steak,	4	2	6
Cider,	4	1	5	Milk,	336	83	419
Cocoa,	1	–	1	Noodles,	2	–	2
Condensed milk,	1	–	1	Proprietary foods,	1	1	2
Cream,	–	1	1	Olive oil,	9	3	12
Cream of tartar,	1	–	1	Pastry,	6	–	6
Dried fruits,	23	33	56	Pickles,	3	–	3
Drugs,	81	17	98	Spices,	2	–	2
Flavoring extracts,	7	1	8	Syrups,	3	2	5
Honey,	2	–	2	Table sauces,	9	–	9
Horse-radish,	2	–	2	Vinegar,	6	–	6
Jams and jellies,	19	–	19	Wine,	1	–	1
Malt extract,	2	–	2	Total,	553	144	697

The samples of drugs found to be adulterated were: spirit of anise, spirit of camphor, spirit of peppermint, tincture of ginger and several proprietary preparations.

The cities and towns in which samples were collected were: Abington, Andover, Athol, Attleborough, Arlington, Belmont, Beverly, Boston, Cambridge, Fall River, Framingham, Fitchburg, Gardner, Haverhill, Holyoke, Hyde Park, Lawrence, Lincoln, Lowell, Lynn, Malden, Medford, Melrose, Methuen, Milford, Milton, North Andover, Norwood, Quincy, Royalston, Spencer, Springfield, Stoughton, Swampscott, Waltham, Warren, Weymouth, Westwood and Woburn.

PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING TO FOOD AND DRUGS.

Seventeen convictions were secured during the month of November, 1909, for selling adulterated food and drugs, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	George L. Averill,	Andover,	Milk (total solids, 10.91).[1]
2	Orrin H. Keith,	Attleborough,	Milk (total solids, 11.06).[2]
3	Orrin H. Keith,	Attleborough,	Milk (total solids, 11.13).
4	Aharon Kasbian,	West Andover,	Milk (total solids, 10.10).[2]
5	Aharon Kasbian,	West Andover,	Milk (total solids, 10.86).
6	William A. Kimball,	Stoughton,	Milk (total solids, 11.70).[1]
7	Daniel L. Reynolds,	Haverhill,	Milk (total solids, 11.12).[2]
8	Daniel L. Reynolds,	Haverhill,	Milk (total solids, 11.12).
9	Anthony Rogers,	North Andover,	Milk (total solids, 10.48).[2]
10	Anthony Rogers,	North Andover,	Milk (total solids, 10.53).
11	Daniel Riley.	Weymouth,	Milk (total solids, 10.16).[2,3]
12	William H. Wakefield,	Spencer,	Milk (total solids, 11.10).[2,3]
13	Julius Shubert,	Boston,	Spirit of anise, 52 per cent., U.S.P.
14	Emery M. Willard,	Boston,	Spirit of camphor, 5 per cent., U.S.P.[3]
15	Curtis W. Lund,	Hyde Park,	Spirit of peppermint, 71 per cent., U.S.P.
16	Frank I. Pierson,	Leominster,	Tincture of iodine, 49 per cent., U.S.P.
17	Herbert J. Turcotte,	Lowell,	Tincture of iodine, 56 per cent., U.S.P.

[1] Skimmed. [2] Watered. [3] Appealed.

Fines imposed, $540.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
10828	Royal Brand Cordial (Tom and Jerry and Honey).	New York Pure Food Cordial Company, New York, N. Y.,	Contained 11 59 per cent. alcohol.
1671 R	Olio Sopraffino per Espostaziene.	Alberti Branzelli & Co.,	Contained cottonseed oil.
1673 R	Olio D'oliva Sopraffino,	– –	Contained cottonseed oil.
2772 N	Pain Vanquisher,	The Standard Soap Works, Boston,	Contained 79.22 per cent. alcohol.
10597	Goff's Cough Syrup,	S. B. Goff & Sons Company, Camden, N. J.,	Contained 8.52 per cent. alcohol.
2780 N	Bardwell's Q. R.,	J. C. Bardwell, Worcester, Mass.,	Contained 7.63 per cent. alcohol.
2784 N	Remedy for dyspepsia and heartburn.	S. Grover Graham Company, Newburg, N. Y.,	Contained 6.00 per cent. alcohol.
2786 N	Alaska Catarrh Compound.	Alaska Compound Company, Lynn, Mass.,	Contained 9.42 per cent. alcohol.
2776 N	Helmbolds Concentrated Compound Sarsaparilla.	– – –	Contained 2.31 per cent. alcohol.
q 3868	Milk,	Joseph Rogers, North Andover, Mass.,	Total solids, 11.00 per cent.; fat, 3.40 per cent.; contained added water
2846 N	Milk,	William H. Wakefield, Spencer, Mass.,	Total solids, 11.10 per cent.; fat, 3.40 per cent.; contained added water.
q 3931	Milk,	Michael J. Driscoll, North Andover, Mass.,	Total solids, 10.94 per cent.; fat, 3.80 per cent.; contained added water.
10829	Milk,	Daniel Riley, East Weymouth, Mass.,	Total solids, 10.16 per cent.; fat, 3.80 per cent.; contained added water.
10830	Milk,	Daniel Riley, East Weymouth, Mass.,	Total solids, 12.20 per cent.; fat, 4.30 per cent.; contained added water.
3116 N	Milk,	Dell H. Morse, Gardner, Mass.,	Total solids, 9.50 per cent.; fat, 1.90 per cent.; contained added water.
3140 N	Milk,	Henry H. Chamberlain, Westwood, Mass.,	Total solids, 11.72 per cent.; fat, 4.25 per cent.; contained added water.
3142 N	Milk,	Henry H. Chamberlain, Westwood, Mass.,	Total solids, 12.44 per cent.; fat, 4.35 per cent.; contained added water.
3148 N	Milk,	Henry H. Chamberlain, Westwood, Mass.,	Total solids, 11.20 per cent.; fat, 3.40 per cent.; contained added water.
3152 N	Milk,	Henry H. Chamberlain, Westwood, Mass.,	Total solids, 11.00 per cent.; fat, 3.00 per cent.; contained added water.
3156 N	Milk,	Henry H. Chamberlain, Westwood, Mass.,	Total solids, 9.90 per cent.; fat, 2.85 per cent.; contained added water.

3172 N	Milk, ...	Edward J. Fuller, Sharon, Mass., ...	Total solids, 10.46 per cent.; fat, 3.40 per cent.; contained added water.
10915	Milk, ...	Harold W. Kee, Warren, R. I., ...	Total solids, 11.08 per cent.; fat, 3.10 per cent.; contained added water.
10916			Total solids, 11.08 per cent.; fat, 3.10 per cent.; contained added water.
10917			Total solids, 11.08 per cent.; fat, 3.00 per cent.; contained added water.
10918			Total solids, 11.08 per cent.; fat, 3.05 per cent.; contained added water.
1753 R	Milk, ...	George L. Averill, Andover, Mass., ...	Total solids, 10.91 per cent.; fat, 2.15 per cent.; proteid, 3.36 per cent.; skimmed milk.
2982 N	Milk, ...	William A. Kimball, Stoughton, Mass., ...	Total solids, 11.70 per cent.; fat, 2.90 per cent.; proteid, 3.48 per cent.; skimmed milk.
3082 N	Milk, ...	George H. Bateman, Norwood, Mass., ...	Total solids, 11.28 per cent.; fat, 2.95 per cent.; proteid, 3.12 per cent.; skimmed milk.
3116 N	Milk, ...	Dell H. Morse, Gardner, Mass., ...	Total solids, 9.50 per cent.; fat, 1.90 per cent.; skimmed milk.

INSPECTION OF DAIRIES.

During the month of November, 1909, 163 dairies supplying milk for public sale in Massachusetts were examined. All but 15 of the number are situated in Connecticut and Rhode Island. The Massachusetts dairies yielded the following data: —

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number to which Letters were sent.	Per Cent.
Hamilton,	–	–	–	–	–
Second inspection,	1	1	100.00	–	–
Lancaster,	–	–	–	–	–
Second inspection,	14	11	78.57	3	21.43

Total number of dairies examined, (including those in Connecticut and Rhode Island),	163
Number found to be free from objectionable conditions,	92
Number to which letters were sent,	71
Total number of conditions to which attention was called,	197
Percentage of dairies which passed inspection,	56.44

The names of the owners of the dairies in Massachusetts found to be worthy of commendation follow: —

Hamilton.

Norman, Maxwell *†

Lancaster.

Blood, W. H.*
Cunningham, Edward *
Gilmore, John *
Howe, John W.*
Lancaster Town Farm *†
McClintock, M. M.*
Schumacher, C. A.*
Sullivan, Estate of John *†
Warren, Charles *
Whittemore, M. M.*
Willard, George *

* Second inspection. † Reported favorably on first inspection.

Connecticut Dairies.

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number to which Letters were sent.	Per Cent.
Ashford,	–	–	–	–	–
Second inspection,	4	1	25.00	3	75.00
Brooklyn,	–	–	–	–	–
Second inspection,	3	–	–	3	100.00
Chaplin,	–	–	–	–	–
Second inspection,	14	10	71.43	4	28 57
Columbia,	–	–	–	–	–
Second inspection,	3	2	66 67	1	33.33
Coventry,	2	1	50.00	1	50.00
Second inspection,	7	5	71.43	2	28.57
Eastford,	–	–	–	–	–
Second inspection,	7	5	71.43	2	28.57
Hampton,	–	–	–	–	–
Second inspection,	20	3	15.00	17	85.00
Lebanon,	–	–	–	-	–
Second inspection,	1	1	100.00	–	–
Mansfield,	–	–	–	–	–
Second inspection,	9	5	55.56	4	44.44
Pomfret,	–	–	–	–	–
Second inspection,	17	4	23 53	13	76.47
Scotland,	–	–	–	–	–
Second inspection,	3	–	–	3	100.00
Windham,	–	–	-	–	–
Second inspection,	2	1	50.00	1	50.00

Total number of Connecticut dairies examined, ... 92
Number found to be free from objectionable conditions, ... 38
Number to which letters were sent, ... 54
Total number of conditions to which attention was called, ... 151
Percentage of dairies which passed inspection, ... 41.30

Rhode Island Dairies.

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number to which Letters were sent.	Per Cent.
Little Compton,	4	2	50.00	2	50 00
Second inspection,	18	16	88.89	2	11.11
Portsmouth,	1	1	100.00	–	–
Second inspection,	5	5	100.00	–	–
Tiverton,	7	2	28.57	5	71.43
Second inspection,	21	16	76.19	5	23.81

Total number of Rhode Island dairies examined, ... 56
Number found to be free from objectionable conditions, ... 42
Number to which letters were sent, ... 14
Total number of conditions to which attention was called, ... 37
Percentage of dairies which passed inspection, ... 75.00

DEATH IN SCHOOL DRINKING CUPS.[1]

By Alvin Davison, M.S., Ph.D., *Professor of Biology in Lafayette College, and author of "The Human Body and Health."*

The greatest achievement of science in the opening decade of the twentieth century is the awakening of the people to the fact that most human diseases are preventable and a large proportion of early deaths avoidable. At least 700,000 of the million and a half deaths occurring annually in the United States result from the minute parasitic plants and animals gaining access to the body. These invisible foes wage a continual warfare against both strong and weak, rich and poor. Civic duty as well as self preservation demands that these life-destroyers should, as far as possible, be shut out of the human system.

The death rate in any locality or country is usually a true index of the habits and education of the people in reference to the protection of health. In benighted Spain, 27 out of every 1,000 inhabitants perish annually, while in enlightened Norway, death claims yearly only 14 of each 1,000 residents. In New Orleans, the death rate among the colored people is 41 per 1,000, while among the white race it is only 21 per 1,000. Ignorance and negligence in regard to the laws of sanitation invite sickness and death.

The chief avenue by which bacteria enter the body is the mouth. The air, food, water, and especially the drinking cup are the usual means by which the disease-producing parasites are transferred from one person to another. The purpose of this paper is to consider only the latter in its relation to health.

The evidence condemning the use of the common drinking vessel upon any occasion, whether at school, church or home, is derived from three sources: (1) the frequent presence of disease-producing bacteria in the mouth; (2) the detection of pathogenic germs on the public cups; and (3) the discovery that where a number of persons drank from a cup previously used by the sick, some of them became ill.

Recent investigations show that the germs of diphtheria and grippe frequently remain from one to three months in the mouths of the patients after they have recovered from the disease. The very extensive and careful observations of the Minnesota State Board of Health demonstrated that in over half of the diphtheria cases virulent germs remained in the nose and throat of the patients three weeks after recovery. Most

[1] Reprinted from the "Technical World Magazine" for August, 1908.

careful examinations by expert bacteriologists show that many of the common sore throats are really light cases of diphtheria. Of the 2,038 mild sore throats examined in the school children of Hartford, Conn., 591 were shown to be due to the true diphtheria germ. The bacilli now universally employed in the making of diphtheria antitoxin were first isolated from a mild sore throat. Bacteria which in one person cause only slight illness may when transferred to another individual produce serious disease and death. This widely different effect of the same germ may be due to the variation in the germ-killing power of the body tissues, or it may result from new association with other germs.

It is an established fact that a considerable number of well persons harbor in their mouths the germs of grippe, pneumonia, diphtheria and tonsilitis. Examination of 4,250 persons by the Massachusetts Association of the Boards of Health showed that over 100 of them carried in their mouths virulent diphtheria germs. Pennington in 1907 found virulent diphtheria bacilli in nearly 5 per cent. of a large number of apparently healthy school-children in Philadelphia. In Minnesota, true diphtheria germs were found in the mouths of 70 persons in every 1,000 examined. The average results of a large number of investigations demonstrate that nearly 1 per cent. of well persons carry in their mouths true diphtheria germs. In Boston, 60 per cent. of all cases of common catarrh examined showed the presence of grippe bacilli. Considerable evidence is at hand showing that the germs of sore throat, pneumonia and bronchitis are present in many people who mingle with the well and drink from the public cups.

During the past six months I have investigated, by means of direct microscopic examination, by cultures and by guinea pig injections, the deposits present on various public drinking vessels. Cup No. 1, which had been in use nine days in a school, was a clear thin glass. It was broken into a number of pieces and properly stained for examination with a microscope magnifying 1,000 diameters. The human cells scraped from the lips of the drinkers were so numerous on the upper third of the glass that the head of a pin could not be placed anywhere without touching several of these bits of skin. The saliva, by running down on the inside of the glass, had carried cells and bacteria to the bottom. Here, however, they were less than one-third as abundant as at the brim.

By counting the cells present on fifty different areas on the glass as seen under the microscope, it was estimated that the cup contained over 20,000 human cells or bits of dead skin. As many as 150 germs were seen clinging to a single cell, and very few cells showed less than 10 germs. Between the cells were thousands of germs, left there by the smears of saliva deposited by the drinkers. Not less than 100,000 bacteria were

present on every square inch of the glass. Most of these were of the harmless kind, abundant in the mouth, but some were apparently the germs of decay, feeding upon the bits of the human body adhering to the cup.

In order to determine how much material each drinker is likely to leave on the cup, I requested 10 boys to apply the upper lip to pieces of clean flat glass in the same way as they touched the cup in drinking. These glass slips thus soiled were properly stained for microscopic examination, which showed an average of about 100 cells and 75,000 bacteria to each slip.

The results of the examination of cups Nos. 2 and 3, taken from a schoolroom, were similar to those of No. 1. Cup No. 4, which had been apparently in use for several months without being washed, was secured from a high school. It was lined inside with a thin brownish deposit. This was washed off with 10 cubic centimeters of sterile water and a sterile swab, and the washings were then placed in a conical tube, which was put into a centrifuge and rotated rapidly until all the solid matter settled to the bottom. By spreading this sediment over a half-square inch of each of twenty-two slides, and staining it, the characteristic features were easily made out under the microscope. Particles of mud, thousands of pieces of skin from the mouth, and millions of bacteria constituted the mass. To determine whether any of these germs belonged to the disease-producing group, ten of the slides were treated with the stain and acid, serving to show the characteristics of Bacillus tuberculosis. On one of these slides was clearly shown a clump of scores of germs corresponding in all details to those of tuberculosis. As occasionally other germs are met with having the same staining qualities and microscopic appearance as those of tuberculosis, I procured another cup from the same school, to apply the final test for detecting those relentless enemies which prey upon human flesh and add daily to the city of the dead in our own land victims to the number of 400.

The washings from this cup were sedimented in the centrifuge tube. One-third of the sediment was injected under the skin of a healthy guinea pig, and another third was used in inoculating a second guinea pig. The first animal died forty hours after receiving the injection. A microscopic examination of the blood in the heart revealed the presence of numerous pneumonia germs, which, when planted on blood serum and agar kept in an incubator at body temperature for two days, developed the characteristic growth of Fraenkel's pneumococcus. This experiment gave undoubted evidence that the germs of pneumonia had been present in sufficient numbers in the cup to cause blood poisoning or septicemic pneumonia in the animal.

The second guinea pig injected with the cup sediment was killed five weeks later. The autopsy revealed numerous tubercular foci in the liver and several much enlarged tubercular lymph glands. Microscopic examination of the diseased tissues proved the presence of the true bacillus tuberculosis. By careful inquiry it was learned that several pupils in the school from which the tubercle-bearing cups were secured were then sufferers from tuberculosis. In the light of recent discoveries, showing that tuberculosis is not usually acquired by inhaling the germs but by receiving them with food or by mouth contact with objects soiled with tubercular deposits, does it not seem probable that the drinking cup may very often serve as the transmitter of the white plague? Dr. Anders of Philadelphia by means of guinea pig inoculations demonstrated the presence of tubercle bacilli in two out of five specimens from the dregs of common communion cups.

In order to make a further study of the germs, a third portion of the sediment from cup No. 5 was planted in culture media serving to isolate the various kinds of bacteria so that the characters of each might be observed. Ten different species were thus separated and examined. Streptococci apparently the same as those occurring in sore throat and tonsilitis were present, as was also the common pus germ staphylococcus aureus. Dr. Anders has reported the discovery on the communion cups from a Philadelphia church of numerous pus germs as well as pus cells.

The microscopical examination of cups Nos. 6 and 7, secured from a railway station and a club-house, showed numerous cells from the lips, and thousands of bacteria present in the upper portion of the vessels, although they appeared quite clean to the naked eye. Cup No. 8, taken from a railway station, was the only vessel examined that could be called reasonably clean. Its surface carried only two or three human cells to the square inch, and upon the same area were less than 500 bacteria.

A third source of evidence condemning the public cup is found in the report of Dr. Forbes of Rochester, who refers to an epidemic of diphtheria in his city which occurred among 24 persons, and was traced unmistakably to a common drinking cup which all the sick had used. Tonsilitis and sore throat are known to affect a larger number of pupils in schools where a common drinking cup is used than in those schools where the individual cup is required, or the sanitary drinking fountain has been installed.

The mortality statistics of the census bureau show that diphtheria, meningitis, bronchitis, tuberculosis, pneumonia and grippe, all of which are likely to be acquired by the use of the common cup, are responsible for nearly 400,000 deaths annually in the United States. This fact indicates that the germs of these diseases produce in a single year more than a million cases of serious illness. The financial loss to the country,

and the mental anguish as well as bodily suffering due to these preventable diseases, call loudly for the banishment of the unsanitary and filthy common communion cup as well as the public drinking vessel, befouled with human excretions shielding the darts of death.

More than 10,000 churches have now adopted the individual communion cups, and many schools either provide a sanitary drinking fountain or require the pupils to use individual cups. In many places in Germany pasteboard cups are furnished, which after being once used are destroyed. Wherever hygienic measures have been adopted in a community sickness and death have decreased. By living more in accordance with the rules of hygiene New York City reduced her death rate from 25 per 1,000 to 18 per 1,000 during the period from 1890 to 1905. Within the same years Chicago has reduced her death rate from 19 to 14 per 1,000.

In Circular 127 of the Bureau of Animal Industry, issued April 4, 1908, are these words: —

The inhalation theory to account for the occurrence of pulmonary tuberculosis has been shown to be no longer tenable, because no substance can be carried into the finer bronchioles by the respiratory process, and because tuberculous lesions in the lung have been shown to spread from the vascular system, the finer capillaries, and not from the air passages. Dried and pulverized tuberculous material has been shown to lack infectiousness, and the infectious spray discharged from the mouths of tuberculous persons during speaking and coughing has been shown to be of importance only in their immediate environment, unless such persons are permitted to handle articles of food, to which the larger droplets of the spray may adhere. The introduction of bacilli into the body through the uninjured wall of the digestive tract, anywhere from the mouth downwards, is the chief mode of infection with tuberculosis.

PROPRIETARY PREPARATIONS ADVERTISED AS UNSALABLE IN NOVEMBER, 1909.

Bok's Cold Tablets. Pierson Drug Company, Washington and Essex streets, Boston, Mass. (No statement of the percentage of acetanilid.)

Royal Brand Cordial. New York Pure Food Cordial Company, New York, U. S. A., distributors. (No statement of the percentage of alcohol.)

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OF

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WEEKLY RETURNS OF DEATHS FROM CITIES AND TOWNS OF MORE THAN 10,000 POPULATION.

WEEK ENDING DEC. 4, 1909.

CITIES AND TOWNS.	Population.[1] Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM—					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	185	37	59	28	9	6	3	–
Worcester,	136,476	31	7	8	–	1	3	2	–
Fall River,	106,486	21	7	8	–	3	–	–	–
Cambridge,	102,112	28	6	14	6	5	1	–	–
Lowell,	96,380	35	7	14	9	5	–	–	–
New Bedford,	85,516	17	4	9	2	4	1	–	–
Lynn,	84,623	23	3	8	5	1	1	1	–
Springfield,	84,237	25	5	8	1	4	2	–	–
Lawrence,	78,000	28	9	9	5	–	1	1	–
Somerville,	76,049	16	4	8	4	–	1	–	–
Brockton,	55,039	12	2	5	2	2	–	1	–
Holyoke,	53,590	13	6	4	1	–	–	–	–
Malden,	41,941	12	5	3	2	1	–	–	–
Chelsea,	40,080	13	3	1	–	1	–	–	–
Newton,	39,642	7	1	–	–	–	–	–	–
Salem,	39,019	12	3	–	–	–	–	–	–
Haverhill,	38,362	9	1	1	–	1	–	–	–
Fitchburg,	34,263	9	–	5	1	4	–	–	–
Everett,	33,597	11	2	1	–	1	–	–	–
Quincy,	31,937	4	–	–	–	–	–	–	–
Taunton,	30,967	8	1	2	2	–	–	–	–
Waltham,	28,761	7	2	2	1	1	–	–	–
Pittsfield,	27,932	7	3	4	1	1	2	–	–
Brookline,	26,674	4	2	–	–	–	–	–	–
Gloucester,	26,011	3	1	1	–	1	–	–	–
North Adams,	22,150	7	1	3	1	1	–	–	–
Northampton,	21,075	9	–	1	–	–	–	–	–
Chicopee,	21,049	10	2	4	1	2	–	–	–
Medford,	20,921	1	–	1	1	–	–	–	–
Beverly,	16,386	5	1	2	–	–	–	–	–
Leominster,	16,030	4	1	2	2	–	–	–	–
Hyde Park,	15,609	3	–	1	–	–	–	–	–
Melrose,	15,459	2	0	–	–	–	–	–	–
Newburyport,	14,834	7	–	–	–	–	–	–	–
Revere,	14,820	4	–	1	1	–	–	–	–
Westfield,	14,750	7	–	1	1	–	–	–	–
Woburn,	14,522	5	0	2	2	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	5	2	2	–	–	1	1	–
Attleborough,	13,913	3	0	–	–	–	–	–	–
Adams,	13,685	7	1	3	–	3	–	–	–
Clinton,	13,105	1	–	–	–	–	–	–	–
Gardner,	13,066	5	3	3	2	–	–	–	–
Milford,	12,722	3	2	2	–	–	–	–	–
Watertown,	12,676	3	–	1	–	1	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	3	1	3	1	1	1	–	–
Weymouth,	11,798	2	0	1	–	1	–	–	–
Framingham,	11,749	4	1	3	1	1	–	–	1
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	2	–	–	–	–	–	–	–
Greenfield,	10,140	1	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,379,468	643	136	210	83	55	20	9	1

[1] The populations were estimated upon the rate of growth from 1900 to 1905. Those of Taunton, Gloucester, North Adams and Clinton were allowed to stand as in 1905, having shown no increase during the five-year period. The gain in the population of Lowell is due to the annexation of a part of the town of Tewksbury. The population of Lawrence by the census of 1905 was 70,050, but, owing to the building of the new Wood and Arlington mills, an increase of about 8,000 is estimated by the Lawrence Board of Health, or 78,000.

WEEK ENDING DEC. 11, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM— Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	203	41	58	22	21	8	–	–
Worcester,	136,476	42	7	13	8	4	–	–	–
Fall River,	106,486	36	14	11	1	1	1	–	–
Cambridge,	102,112	28	3	11	6	3	1	–	–
Lowell,	96,380	27	10	8	5	2	1	–	–
New Bedford,	85,516	32	10	11	5	3	2	–	–
Lynn,	84,623	25	5	6	3	2	1	–	–
Springfield,	84,237	28	9	7	2	1	3	–	–
Lawrence,	78,000	14	8	4	2	–	–	–	–
Somerville,	76,049	16	0	3	2	1	–	–	–
Brockton,	55,039	13	4	3	1	–	–	2	–
Holyoke,	53,590	17	8	11	4	3	–	2	–
Malden,	41,941	12	3	3	–	1	–	1	–
Chelsea,	40,080	8	1	1	–	1	–	–	–
Newton,	39,642	8	2	2	2	–	–	–	–
Salem,	39,019	8	–	3	1	2	–	–	–
Haverhill,	38,362	8	1	2	1	–	–	1	–
Fitchburg,	34,263	6	2	1	1	–	–	–	–
Everett,	33,597	3	1	2	–	1	1	–	–
Quincy,	31,937	7	1	2	1	–	–	–	–
Taunton,	30,967	15	5	9	4	–	1	–	–
Waltham,	28,761	7	2	2	1	–	–	1	–
Pittsfield,	27,932	10	3	4	3	–	–	1	–
Brookline,	26,674	8	1	2	2	–	–	–	–
Gloucester,	26,011	5	2	–	–	–	–	–	–
North Adams,	22,150	6	2	1	–	1	–	–	–
Northampton,	21,075	3	–	–	–	–	–	–	–
Chicopee,	21,049	5	3	2	2	–	–	–	–
Medford,	20,921	7	1	1	1	–	–	–	–
Beverly,	16,386	3	–	–	–	–	–	–	–
Leominster,	16,030	3	1	1	1	–	–	–	–
Hyde Park,	15,609	2	1	1	–	1	–	–	–
Melrose,	15,459	1	0	–	–	–	–	–	–
Newburyport,	14,834	3	–	1	–	1	–	–	–
Revere,	14,820	1	1	–	–	–	–	–	–
Westfield,	14,750	4	1	1	–	–	1	–	–
Woburn,	14,522	6	1	1	1	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	2	0	–	–	–	–	–	–
Attleborough,	13,913	2	0	–	–	–	–	–	–
Adams,	13,685	4	2	1	–	1	–	–	–
Clinton,	13,105	3	–	2	–	1	–	–	–
Gardner,	13,066	4	0	–	–	–	–	–	–
Milford,	12,722	7	1	2	–	2	–	–	–
Watertown,	12,676	3	1	1	1	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	1	1	–	–	–	–	–	–
Weymouth,	11,798	7	1	3	2	–	1	–	–
Framingham,	11,749	4	–	1	–	1	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	1	–	–	–	–	–	–	–
Greenfield,	10,140	6	–	2	2	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,379,468	674	160	200	87	54	21	8	–

WEEK ENDING DEC. 18, 1909.

CITIES AND TOWNS.	Population. Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM—					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever	Measles.
Boston,	624,491	215	63	71	26	19	4	3	1
Worcester,	136,476	33	8	8	2	6	–	–	–
Fall River,	106,486	28	9	9	1	2	–	–	–
Cambridge,	102,112	37	2	15	5	10	–	–	–
Lowell,	96,380	45	23	16	10	4	1	–	–
New Bedford,	85,516	33	17	14	10	1	1	1	–
Lynn,	84,623	18	3	7	2	4	1	–	–
Springfield,	84,237	19	9	7	5	1	–	–	–
Lawrence,	78,000	17	8	6	–	3	–	–	–
Somerville,	76,049	15	0	7	3	4	–	–	–
Brockton,	55,039	13	5	1	–	1	–	–	–
Holyoke,	53,590	18	2	4	1	1	–	–	–
Malden,	41,941	8	2	1	1	–	–	–	–
Chelsea,	40,080	12	–	1	–	1	–	–	–
Newton,	39,642	5	1	2	1	1	–	–	–
Salem,	39,019	11	2	1	–	1	–	–	–
Haverhill,	38,362	9	2	2	–	1	1	–	–
Fitchburg,	34,263	13	5	3	–	–	2	–	1
Everett,	33,597	6	1	1	–	1	–	–	–
Quincy,	31,937	8	2	4	1	3	–	–	–
Taunton,	30,967	18	4	5	4	–	1	–	–
Waltham,	28,761	8	0	2	1	–	–	1	–
Pittsfield,	27,932	7	1	4	1	2	–	1	–
Brookline,	26,674	8	2	1	1	–	–	–	–
Gloucester,	26,011	3	1	1	–	1	–	–	–
North Adams,	22,150	10	1	3	1	2	–	–	–
Northampton,	21,075	7	2	3	1	1	–	–	–
Chicopee,	21,049	14	5	4	2	1	1	–	–
Medford,	20,921	8	4	3	1	1	1	–	–
Beverly,	16,386	9	–	–	–	–	–	–	–
Leominster,	16,030	6	2	2	1	–	1	–	–
Hyde Park,	15,609	5	1	1	1	–	–	–	–
Melrose,	15,459	2	0	–	–	–	–	–	–
Newburyport,	14,834	5	–	–	–	–	–	–	–
Revere,	14,820	3	2	–	–	–	–	–	–
Westfield,	14,750	2	–	–	–	–	–	–	–
Woburn,	14,522	4	2	1	1	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	2	0	–	–	–	–	–	–
Attleborough,	13,913	3	0	1	–	1	–	–	–
Adams,	13,685	4	1	1	–	1	–	–	–
Clinton,	13,105	1	1	–	–	–	–	–	–
Gardner,	13,066	5	1	2	–	1	–	1	–
Milford,	12,722	0	–	–	–	–	–	–	–
Watertown,	12,676	0	–	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	4	2	2	1	–	1	–	–
Weymouth,	11,798	4	0	1	–	–	1	–	–
Framingham,	11,749	5	–	2	1	1	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	2	–	1	1	–	–	–	–
Greenfield,	10,140	2	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,379,468	714	196	220	86	76	16	7	2

WEEK ENDING DEC. 25, 1909.

CITIES AND TOWNS.	Population Estimated for 1909.	Reported Deaths in Each.	Deaths under Five Years.	DEATHS FROM—					
				Principal Infectious Diseases.	Acute Lung Diseases.	Phthisis.	Diphtheria.	Typhoid Fever.	Measles.
Boston,	624,491	228	62	83	40	18	8	1	1
Worcester,	136,476	33	11	14	6	4	2	–	–
Fall River,	106,486	34	16	9	1	3	1	2	–
Cambridge,	102,112	32	7	15	11	1	–	–	–
Lowell,	96,380	35	15	9	6	–	1	–	2
New Bedford,	85,516	25	8	9	5	1	–	–	–
Lynn,	84,623	19	4	6	3	–	1	–	–
Springfield,	84,237	26	1	11	4	5	–	–	–
Lawrence,	78,000	31	12	14	5	4	1	–	1
Somerville,	76,049	19	6	5	–	2	2	–	–
Brockton,	55,039	17	3	4	–	3	–	–	–
Holyoke,	53,590	17	7	5	2	2	–	–	–
Malden,	41,941	10	1	3	1	1	–	–	–
Chelsea,	40,080	11	1	3	1	1	1	–	–
Newton,	39,642	9	1	3	2	1	–	–	–
Salem,	39,019	19	3	8	4	3	1	–	–
Haverhill,	38,362	18	3	6	4	2	–	–	–
Fitchburg,	34,263	5	2	1	–	–	1	–	–
Everett,	33,597	9	2	1	–	1	–	–	–
Quincy,	31,937	6	3	2	–	1	–	–	–
Taunton,	30,967	12	3	7	6	1	–	–	–
Waltham,	28,761	6	0	1	1	–	–	–	–
Pittsfield,	27,932	–	–	–	–	–	–	–	–
Brookline,	26,674	5	–	–	–	–	–	–	–
Gloucester,	26,011	6	1	–	–	–	–	–	–
North Adams,	22,150	3	1	2	–	2	–	–	–
Northampton,	21,075	5	1	1	–	1	–	–	–
Chicopee,	21,049	6	4	2	2	–	–	–	–
Medford,	20,921	7	–	2	2	–	–	–	–
Beverly,	16,386	3	1	–	–	–	–	–	–
Leominster,	16,030	4	2	–	–	–	–	–	–
Hyde Park,	15,609	2	1	2	1	–	1	–	–
Melrose,	15,459	5	2	–	–	–	–	–	–
Newburyport,	14,834	2	–	2	1	1	–	–	–
Revere,	14,820	2	1	–	–	–	–	–	–
Westfield,	14,750	4	–	1	1	–	–	–	–
Woburn,	14,522	3	0	1	1	–	–	–	–
Peabody,	14,512	–	–	–	–	–	–	–	–
Marlborough,	14,456	6	2	2	1	–	1	–	–
Attleborough,	13,913	3	0	2	1	1	–	–	–
Adams,	13,685	4	–	1	1	–	–	–	–
Clinton,	13,105	1	–	–	–	–	–	–	–
Gardner,	13,066	3	1	–	–	–	–	–	–
Milford,	12,722	3	0	–	–	–	–	–	–
Watertown,	12,676	5	1	–	–	–	–	–	–
Plymouth,	12,514	–	–	–	–	–	–	–	–
Southbridge,	11,848	3	2	2	–	–	–	–	2
Weymouth,	11,798	1	0	–	–	–	–	–	–
Framingham,	11,749	3	–	1	1	–	–	–	–
Wakefield,	11,124	–	–	–	–	–	–	–	–
Webster,	11,109	–	–	–	–	–	–	–	–
Arlington,	10,520	1	–	1	1	–	–	–	–
Greenfield,	10,140	0	–	–	–	–	–	–	–
Recapitulation.									
Total of reporting towns,	2,351,545	711	191	241	115	59	21	3	6

WEEKLY RETURNS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES.

Deaths from Infectious Diseases not specifically mentioned in above Tables during the Weeks of Dec. 4, 11, 18 and 25, 1909.

DISEASE.	Place.	Week ending—			
		Dec. 4.	Dec. 11.	Dec. 18.	Dec. 25.
Cerebro-spinal meningitis,	Boston,	–	–	1	–
	Northampton,	1	–	–	–
	Somerville,	1	–	–	–
	Worcester,	2	–	–	1
Scarlet fever,	Boston,	–	–	–	1
	Brockton,	–	–	–	1
	Lynn,	–	–	–	2
	Malden,	–	1	–	–
	Springfield,	–	1	–	–
	Taunton,	–	1	–	–
Whooping cough,	Boston,	–	1	2	–
	Holyoke,	–	1	–	–
	Lawrence,	1	–	–	1
	Worcester,	–	–	–	1
Erysipelas,	Boston,	2	–	–	2
	Cambridge,	1	1	–	–
	Fall River,	1	1	–	–
	Holyoke,	1	–	–	–
	New Bedford,	1	–	–	–
	Northampton,	–	–	1	–
	Worcester,	–	1	–	–
Tuberculosis other than pulmonary.	Beverly,	1	–	–	–
	Boston,	5	1	3	2
	Cambridge,	–	–	–	2
	Chicopee,	1	–	–	–
	Clinton,	–	1	–	–
	Gardner,	1	–	–	–
	Holyoke,	–	–	2	–
	Hyde Park,	1	–	–	–
	Lawrence,	–	1	3	–
	Lowell,	–	–	1	–
	New Bedford,	–	1	1	1
	Quincy,	–	1	–	1
Influenza,	Boston,	–	–	–	5
	Cambridge,	–	–	–	1
	Springfield,	–	–	–	1

WEEKLY RETURNS OF CASES OF INFECTIOUS DISEASES.

Cases of Infectious Diseases reported during the Weeks of Dec. 4, 11, 18 and 25, 1909.

[Under the provisions of section 52 of chapter 75 of the Revised Laws.]

	Week ending —			
	Dec. 4.	Dec. 11.	Dec. 18.	Dec. 25.
Diphtheria,	220	202	191	201
Measles,	202	209	284	193
Scarlet fever,	140	143	158	168
Typhoid fever,	52	54	45	35
Tuberculosis, pulmonary,	113	157	148	123
Cerebro-spinal meningitis,	1	1	–	–
Whooping cough,	13	30	17	14
Varicella,	65	84	56	57
Mumps,	3	–	3	–
Ophthalmia neonatorum,	1	1	1	1
Tuberculosis other than pulmonary,	1	1	1	1
Smallpox,	–	–	–	–
Tetanus,	–	–	1	1
Trichinosis,	–	–	1	–
Trachoma,	–	3	–	–
Anterior poliomyelitis,	3	1	–	2
Leprosy,	–	–	1	–

MONTHLY REPORT ON INSPECTION OF FOOD AND DRUGS.

The following summary presents the results of the examination of food and drugs made by the State Board of Health during the month of December, 1909: —

Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.	Articles examined.	Number found to be of Good Quality.	Number adulterated or varying from the Legal Standard.	Total.
Butter,	16	2	18	Maple syrup,	2	–	2
Canned vegetables,	1	–	1	Meat products: —			
Cheese,	1	–	1	Canned meat,	3	–	3
Cider,	1	2	3	Hamburg steak,	5	4	9
Cocoa,	5	–	5	Head cheese,	1	–	1
Coffee,	4	–	4	Mince meat,	6	–	6
Condensed milk,	3	–	3	Sausages,	11	2	13
Confectionery,	1	–	1	Tripe,	1	–	1
Cream,	12	1	13	Milk,	413	59	472
Cream of tartar,	1	–	1	Olive oil,	11	2	13
Dried fruits,	8	1	9	Pastry,	4	–	4
Drugs,	51	12	63	Shrimp,	1	–	1
Flavoring extracts,	5	–	5	Spices,	11	–	11
Honey,	1	–	1	Table sauce,	–	1	1
Jams and jellies,	3	1	4	Wine,	3	2	5
Lard,	9	1	10	Total,	594	90	684

The samples of drugs found to be adulterated were: alcohol, spirit of camphor and spirit of peppermint.

The cities and towns in which samples were collected were: Athol, Amesbury, Beverly, Boston, Brookline, Brockton, Braintree, Cambridge, Charlton, Dedham, Fall River, Fitchburg, Gardner, Granby, Lawrence, Lexington, Longmeadow, Lynn, Malden, Natick, Newburyport, New Bedford, Newton, North Andover, Norwood, Pittsfield, Quincy, Salem, Somerville, Swampscott, Taunton, Waltham, Warren, Webster, West Springfield, Woburn, Worcester.

PROSECUTIONS FOR VIOLATIONS OF THE LAW RELATING TO FOOD AND DRUGS.

Fifteen convictions were secured during the month of December, 1909, for selling adulterated food and drugs, as follows: —

No.	Name of Defendant.	Place.	Character of Article sold.
1	John Cavanaugh,	Lawrence,	Hamburg steak.
2	Gustav Yunggebauer,	Lawrence,	Hamburg steak.
3	Mary Burns,	Saugus,	Milk (total solids, 11.79).[1]
4	Henry H. Chamberlain,	Westwood,	Milk (total solids, 11.00).[2]
5	Willard Dean,	Norwood,	Milk (total solids, 10.84).
6	Edward J. Fuller,	Sharon,	Milk (total solids, 10.46).[2]
7	William T. Hardy,	Lexington,	Milk (total solids, 10.58).[1,3]
8	William T. Hardy,	Lexington,	Milk (total solids, 10.58).
9	Gustav A. Peterson,	Lexington,	Milk (total solids, 9.33).
10	Gustav A. Peterson,	Lexington,	Milk (total solids, 8.98).
11	David A. Robinson,	Fitchburg,	Milk (total solids, 11.86).[1]
12	David A. Robinson,	Fitchburg,	Milk (total solids, 11.64).[3]
13	Joseph Teot,	Pittsfield,	Milk (total solids, 11.38).[2]
14	Howard McKee,	Fall River,	Milk (total solids, 11.08).[2]
15	Howard McKee,	Fall River,	Milk (total solids, 11.08).

[1] Appealed. [2] Watered. [3] Skimmed.

Fines imposed, $460.

LIST OF ADULTERATED FOODS, ETC., FOR DECEMBER, 1909.

Number of Sample.	Character of Sample.	Name of Manufacturer, Wholesaler or Producer.	Results of Analyses.
3097 R	Olive oil, S. Giovanni Brand.	W. P. Bernaguzzi, New York, N. Y.,	Contained 90 per cent. cottonseed oil. Improperly labelled.
2053 R	Rock, rye, and honey,	Wood Pollard & Co., Boston, Mass.,	Contained 35.12 per cent. alcohol by volume.
10987	Bishop's Chile Sauce,	Bishop & Co., Los Angeles, San Francisco and New York, N. Y.	Contained 0.52 per cent. benzoate of soda. Improperly labelled 0.1 per cent. benzoate of soda.
q 4043	Spirit of peppermint,	W. R Scott & Son, Worcester, Mass.,	60 per cent. U. S. P. strength.
q 4046	Spirit of peppermint,	William L. Davis, Worcester, Mass.,	61.1 per cent. U. S. P. strength.
2095 R	Milk,	Gustav Peterson, Lexington, Mass.,	Total solids, 9.33 per cent.; fat, 3.20 per cent.; contained added water.
3111 R			Total solids, 8.98 per cent.; fat, 2.60 per cent.; contained added water.
3081 R	Milk,	Albert A. Forbush, Braintree, Mass.,	Total solids, 11.10 per cent.; fat, 3.25 per cent.; contained added water.
3083 R			Total solids, 11.18 per cent.; fat, 3.30 per cent.; contained added water.
3085 R			Total solids, 12.08 per cent.; fat, 4.00 per cent.; contained added water.
3087 R			Total solids, 11.96 per cent.; fat, 3.90 per cent ; contained added water.
3089 R			Total solids, 10.28 per cent.; fat, 3.00 per cent.; contained added water.
10992	Milk,	Otto Reiche, Wobster, Mass.,	Total solids, 10.30 per cent.; fat, 3.15 per cent.; contained added water.
10993			Total solids, 9.99 per cent.; fat, 2.95 per cent.; contained added water.

10997	Milk, ...	Slater & Sons, Webster, Mass., ...	Total solids, 12.10 per cent.; fat, 4.70 per cent.; contained added water.
10998	Milk, ...	Jacob Weilock, Webster, Mass , ...	Total solids, 11.55 per cent.; fat, 3.60 per cent.; contained added water.
q 4151	Milk, ...	Adam Robson, Salem, Mass, ...	Total solids, 12.38 per cent.; fat, 4.10 per cent.; contained added water.
3157 R	Milk, ...	Lewis S. Hardy, Waltham, Mass, ...	Total solids, 10.60 per cent.; fat, 3.10 per cent.; contained added water.
3163 R	Milk, ...	John Monaghan, Jr., West Newton, Mass., . .	Total solids, 10.48 per cent.; fat, 3.10 per cent.; contained added water.
3165 R			Total solids, 10.30 per cent.; fat, 3.10 per cent.; contained added water.
3005 R	Milk, ...	William T. Hardy, Lexington, Mass., ...	Total solids, 10.58 per cent.; fat, 1.70 per cent.; contained skimmed milk.

INSPECTION OF DAIRIES.

During the month of December, 1909, 255 dairies supplying milk for public sale in Massachusetts were examined, of which 56 are situated in New York. The Massachusetts dairies yielded the following data: —

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Berlin,	3	1	33.33	2	66.67
Second inspection,	24	18	75.00	6	25.00
Third inspection,	2	2	100.00	–	–
Boylston,	–	–	–	–	–
Second inspection,	1	–	–	1	100.00
Millis,	12	5	41.67	7	58.33
Second inspection,	17	9	52.94	8	47 06
Northborough,	4	4	100.00	–	–
Second inspection,	45	35	77.78	10	22.22
Sterling,	9	3	33 33	6	66 67
Second inspection,	81	27	33.33	54	66.67
Third inspection,	1	1	100.00	–	–

Total number of dairies examined (including those in New York),	255
Number found to be free from objectionable conditions,	137
Number concerning which letters were sent,	118
Total number of conditions to which attention was called,	363
Percentage of dairies which passed inspection,	53.73

In addition to the above, 107 dairies were visited at which the sale of milk had been discontinued.

The names of the owners of the dairies in Massachusetts found to be worthy of commendation follow: —

Berlin.

Ayers, W. H.*†	Harper, H. H.*†	Rogers, Mary O.*
Barnes, George H.*	Hastings, Arthur*†	Sawyer, C. M.‡
Berry, T. C.*	Kendall, L. P.*	Sawyer, H. J.
Brewer, L. W.*†	Marble, W. F.*	Sawyer, J. H.*
Bruce, Willard G.*	Naugher, Edward *†	Severance, N. N.‡
Carter, L. D.*	Paradis, L. W.*	Spofford, C. E.*†
Elms, J. S.*	Porter, S. E.*†	James D. Tyler.*†

Millis.

Adams, Moses *	Keefe, Patrick *	Simond, Louis *
Brushok, Otto *	Post, B. F.*	Slayton, J. C.*
Cassidy, T.	Richardson, C. F.*	Smith, Edward
Clark, Stanley *	Richardson, E. L.	Thorne Bros.*
Hubbard, E.	Rotman, H.	

* Second inspection. † Reported favorably on first inspection. ‡ Third inspection.

Northborough.

Allen, John *
Allen, Walter O.*†
Balcom, Norman*†
Bemis, E. H.*
Blair, F. H.*†
Blakely, Daniel
Blakely, Henry *
Brigham, W. O.*
Buckley, Clarence *
Burdette, C. H.*
Carey, Frank
Carlson, S. H.*
Chapdelaine, Oliver *†
Collins, Hiram *
Davis, C. A.*
Duplisse, W. H.*
Fawcett, Dana W.*†
Flibert, Thomas *
Franklin, Frederick *
Hildreth, Chester E.*
Johnson, Carl
Kimball, C.*
Lanois, Adam *
Lawrence, C. A.*
Mayo, C. E.*†
Norcross, E. W.*
Richardson, Theo. P.*
Russell, Walker *
Sampson, W. H.*
Shaw & Duval
Smith, Chester A.*
Sparrow, L. A.*
Stone, Walter *
Valentine, E. C.*†
Warren, George A.*
Whitcomb, Levi *
Wilcox, E. P.*
Wilson, Mrs. Lucy J.*†
Woodward, T. C.*†

Sterling.

Bacon, Henry‡
Boutwell, E. E.*
Burpee, J. S.*†
Buttrick, George F.*
Buttrick, Mrs. Mary A.*
Buttrick, Miss Mary E.*†
Corkum, D. W.*
Dee, John*
Flagg, George*†
Gleason, Walter D.*
Hawkins, Thomas*
Heywood, E. K.*
Kendall, George E.*
Kendall, Luther B.*†
Lawrence, J. O.*†
Lawton, J. W.
Magee, Ralph E.*
Mosher, A. J.*
Newhall, A. W.*
Pratt, J. F.*†
Rice, W. F.*
Sanders, S. S.*
Stevens, R. R.
Stockwell, C. L.*
Stuart, George F.*†
Trask, F. R.*
Walker, W. S.*†
Wilcox, F. C. N.*†
Wilder, A. W.*†
Wilder, Harry M.*
Wood, C. A.

New York Dairies.

Place.	Number examined.	Number found to present no Objectionable Features.	Per Cent.	Number concerning which Letters were sent.	Per Cent.
Buskirks,	–	–	–	–	–
Second inspection,	14	9	64.29	5	35.71
Cambridge,	–	–	–	–	–
Second inspection,	13	9	69.23	4	30.77
Eagle Bridge,	–	–	–	–	–
Second inspection,	16	9	56.25	7	43.75
Hoosick,	–	–	–	–	–
Second inspection,	4	1	25.00	3	75.00
Petersburg,	–	–	–	–	–
Second inspection,	2	2	100.00	–	–
Schaghticoke,	–	–	–	–	–
Second inspection,	7	2	28.57	5	71.43

Total number of New York dairies examined,	56
Number found to be free from objectionable conditions,	32
Number concerning which letters were sent,	24
Total number of conditions to which attention was called,	68
Percentage of dairies which passed inspection,	57.14

* Second inspection. † Reported favorably on first inspection. ‡ Third inspection.

INVESTIGATION OF TYPHOID FEVER AT MAYNARD, MASS.[1]

In September, 1905, X, a farmer of Maynard, after having been in poor health all summer, and after a two weeks' trip to Maine, was taken sick with typhoid fever. The fever ran for twenty-one days; then he had a relapse, and in all he was in bed eight weeks. In January, 1906, Mrs. X became ill. She ran no fever and did not think she had typhoid. She was in bed but one week, and considered herself merely nervously tired. Since his sickness X has been in unusually good health. He has had no jaundice and no abdominal pain.

In 1906 X began to keep two cows, and since that time cases of typhoid fever have occurred among his milk customers as follows: —

	No. of Cases.	
September, 1906,	1	
April, 1907,	2	(possibly 3)
May, 1907,	1	
June, 1908,	1	
September, 1908,	2	(possible cases said to be customers of X)
March, 1909,	1	
August, 1909,	1	
September, 1909,	2	
Total,	9	(or possibly 12 cases)

This number of cases is larger than the total number reported by the Maynard board of health for the whole town during this period.

These cases of typhoid fever have been confined to a residence portion of the town about half a mile square, centering about X's house. The region is in the better portion of the town, well elevated, with good hygienic conditions, and not close to the mills or the river.

The people are seemingly of moderate means, not foreign born, and of good intelligence. The houses have separate cesspools. There is no town sewer. The water supply is the same all through the town. The ice for the whole town comes from the same source — the river.

There is a well in the neighborhood used by a large number of people. Several of the typhoid cases did not use this well, and many other uninfected persons did get some of their drinking water there. X did not use this well.

The hygienic condition of X's place is quite unsuited for the production of milk. The cesspool is not carefully sealed. The barn is filthy and fly infested. An unguarded privy drains into the cellar, where the

[1] Disease due to milk contamination by a chronic carrier (urine).

manure and a pig are kept. Complaints have been made by the neighbors of the smell from the place.

X has kept two cows, which have yielded him about two 8½ quart cans daily. He milks the cows and strains the milk himself. Mrs. X washes the cans. The milk is peddled about the neighborhood by X soon after it is milked. It is not iced.

No definite conclusions as to the source of the typhoid cases have been drawn. The time that has elapsed since many of the cases occurred has made the obtaining of accurate information difficult. The possibility that X is a carrier has been considered. If he is a carrier it is more than probable that he has infected the milk. The prompt distribution of the milk may account for the small number of cases that have occurred at any one time.

Specimens of urine and stool have been obtained for examination.

Date of the investigation, Sept. 29, 1909.

Subsequent Notes.

Shortly after the above date specimens of feces and urine were obtained from X. Bacteriological examination of this material showed no typhoid bacilli in the feces, but there was an abundant growth of motile bacilli in the urine. The bacilli corresponded in cultural and agglutination characters to typhoid bacilli. A second examination of the man's urine and feces was made. The same condition was again found.

X was informed of his condition and forbidden to distribute any more milk. The board of health of Maynard was notified.

On November 4 X was given urotropin, with a dosage of 10 grains, t. i. d. At the end of about ten days a specimen of urine was examined, and showed apparently a marked decrease in the number of typhoid bacilli. Owing to complaints of discomfort, the urotropin was then discontinued for a few days. Examination of the urine at the end of this period showed a marked increase in the number of bacilli. Urotropin was then resumed, but with a dosage of 5 grains, t. i. d. Ten days later, December 3, a specimen of urine showed an apparent decrease in the bacteriological content. December 13 the urine showed a moderate number of bacilli.

On December 15 the patient was directed to discontinue the use of urotropin and take copper sulphate in one-quarter-grain capsules t. i. d. After two weeks' trial of this medication urinary examination showed no improvement in the condition.

At the beginning of the year 1910, four and a half years after his

typhoid fever attack, in spite of treatment with urotropin and copper sulphate, this man shows a constant typhoid bacilluria. He has no symptoms of cystitis, and feels better than he did before being sick.

ANIMAL DISEASES TRANSMISSIBLE TO MAN.[1]

By Theobald Smith, M.D., LL.D., *George Fabyan Professor of Comparative Pathology in the Medical School of Harvard University and Pathologist of the Massachusetts State Board of Health.*

Introductory.

The points of contact between human and animal life on the globe are numerous, complex, and of great importance to mankind. In the earliest stages of man's development he was little more than one of the higher animals himself. Through his growth in intelligence he has gradually segregated himself, and gained mastery over a portion of animal life; he subjugated and domesticated certain species, and others he destroyed.

There remains still the larger portion of animal life quite uncontrolled by man. Through persistent efforts, which have been and are still being made, to subjugate and to destroy it, we have learned that this is no easy task. In fact its difficulty seems to be in inverse proportion to the size of the animals to be dealt with. Though the larger mammals and birds are either under control or in process of extermination, the smaller species, like rats and mice, flourish in our midst. Descending to the invertebrates, we learn to our dismay that insects are almost beyond control, and that they possess much of the tenacity of veritable micro-organisms of disease. Human skill and resourcefulness have been heavily taxed to make even an impression on our insect pests.

Among animals we have thus, on the one hand, a small group of friends, or at least slaves and helpers, representing enormous economic wealth at the present time, and, on the other, a large group of destructive enemies, or, at best, to us, useless messmates. A closer scrutiny of this relationship between human and animal life shows that animals may injure us in two ways. They may threaten our food supply and they may transmit to us certain of their diseases. Among the higher animals the danger from any attack on our food supply is slight. Insect life

[1] Illustrated lecture delivered April, 1908, in a public course on sanitary science, in the medical department of Columbia University, New York City.

is, on the other hand, a real danger, and the annual losses from insect depredations are very great. The higher animals, which have survived man's conquest, and which have become his burden bearers, his sources of food and clothing and his daily associates, are subject to certain infectious diseases which may be transmitted to man. Among insects and certain of their near relatives there occur species which during the past twenty years have been placed in a new light, in that certain discoveries have shown them to be capable of carrying infection from man to man, or even from animals to man. These insects, ignored until recently, have been found to play a most important rôle, especially in tropical and subtropical countries. They practically control, through their disease-bearing proclivities, the fate of mankind in tropical countries.

Our subject, therefore, divides itself naturally into two quite distinct parts. In the first place we are to consider the diseases transmissible from the valuable domesticated animals to us. The important problem which here confronts us is how to deal with these diseases without injuring or destroying the usefulness of the animals. The second problem concerns the insects, which are presumably of no use to us. Their biological characters are, however, such as to make their annihilation a very difficult problem.

Higher Animals as Sources of Disease.

Turning now to the first group of animals, those which we denominate the higher animals, I shall not go astray in once more emphasizing their value to the human race. It is in fact difficult to grasp the economic and sanitary importance of these species. If we take away from our daily diet certain animal foods, such as meat, milk, butter and eggs, there seems to be little left. At any rate it would take time for most of us to adjust ourselves to a diet from which these four articles are left out. If from our clothing we eliminate articles made of wool, hides and fur, a wide gap is opened, not easily filled with substitutes. We should not forget the labors of the horse and the ox in summing up the economic resources of animal life. In agricultural life man's association with animals is quite intimate. Even in the city we associate voluntarily and intimately with dogs, cats, parrots and singing birds, and they are to us an inexhaustible fund of pleasure. We associate involuntarily with rats and mice, for these pests penetrate into our homes and attack our foods.

Each species among the higher animals is beset like ourselves by a number of infectious diseases, which are usually limited to the species

and are its exclusive property, so to speak. Only a few pass to other species, and the interest felt in the integrity of these animals has led to the development of a special department of medical education, known as veterinary medicine, whose function it is to study these diseases and find ways and means for their eradication.

Of the relatively few diseases which may be transmitted to man, public health and sanitary science must take cognizance. They have created a difficult situation; for, as stated above, we must balance between the usefulness of an animal and its relative danger, between the commercial value of its hide, flesh, hair and milk, and their incidental danger to human health and life.

I shall now very briefly discuss the most important animal diseases transmissible to man, and in so doing group them, (1) as contact or inoculation diseases and (2) as food infections. Among the former are such diseases as anthrax, bubonic plague, glanders, rabies, psittacosis and certain skin diseases of mice and cats. Among the latter are tuberculosis, foot-and-mouth disease, Malta fever, meat-poisoning, botulism and trichinosis. The classification is somewhat arbitrary and not wholly correct, for some diseases belong to both groups. Thus, while animal tuberculosis is chiefly transmitted in milk, it may also be inoculated into wounds of the hands, as happens occasionally in the butcher trade.

Anthrax is among the best known and most widely disseminated diseases of the first group. It affects sheep, horses and cattle. The bacillus which causes it is of interest from its historical relation to the study of micro-organisms. It was one of the first seen in the blood with the microscope, about fifty years ago, and soon after proved to be the cause of this fatal disease. It was studied by our two greatest bacteriologists, Pasteur and Koch, and both gained celebrity from their achievements with this microbe.

This bacillus is very resistant to destruction, and this vitality is due to its capacity for forming spores. The rod-shaped organism produces within itself an oval body. The rod disintegrates; but the oval body, or spore, maintains its vitality under certain conditions for years. Bacteriologists have frequently tested the prolonged life of such spores. In 1902 I put small threads with spores attached into an ordinary cotton-plugged bottle, and placed the bottle in a closet in the laboratory. Six years later I removed some of the threads and placed them in a suitable culture medium. Within twenty-four hours the spores had germinated and given rise to an abundant progeny of bacilli.

The disease is usually contracted by animals on pastures, when they

eat the spores on the grass. It may also be inoculated by flies. It is highly fatal. The bacilli multiply rapidly, and after the death of the animal they form spores in the blood and other fluids which escape from the body. These spores thus reinfect the pasture, and become attached to the hides, wool, hair and flesh. Transported to distant countries in these products, they are still capable of producing disease. Men who handle hides may become inoculated on the face, neck and hands. Those who handle horsehair and wool imported from anthrax-infected countries may become infected by inhaling dust from these raw materials in factories, and die of the so-called wool-sorter's disease.

The environment of such factories may become permanently infected if the climate and soil are favorable. The factory wastes containing the spores are washed down in streams, and eventually the pastures bordering such streams become the source of fatal diseases. Such plague spots are known to exist in our country as a result of importation, and it is simply a matter of time to what extent this disease will permanently lodge on our pastures, unless public health officials are given the authority to exercise a firm pressure upon industries which are in position to mortgage our soil forever to disease. Much work has been done by governmental agencies to discover processes which will disinfect hides and hair without injuring or even destroying the commercial value of these raw materials.

A method of vaccinating live stock pasturing on permanently infected land was devised by Pasteur. It constitutes one of his most brilliant achievements in a period of almost universal ignorance and skepticism concerning the possibility of vaccination. Industrial hygiene has also contributed its share in the prevention of anthrax by its steady warfare upon dust, and by its demand for machinery which will carry off such dust from the workrooms of operatives in factories. I have dwelt at some length upon anthrax and its bacillus because it illustrates the relation existing between the biology of a microbe and its industrial and agricultural relationships. Were it not for the spore, anthrax would hardly be of much consequence. The great vitality of the spore causes the slow extension of infected territory and the contamination of valuable raw materials. It has brought into action against the disease itself the forces of industrial hygiene and the resources of bacteriology in the use of vaccines, disinfectants and curative serums.

Glanders is a bacterial disease of the horse and his immediate relatives, the ass and mule. Other domestic animals, such as cats, are occasionally infected from the horse; but in general it is true that glanders is peculiar to the horse. From the horse it is occasionally

transmitted to man. It has many of the characters of tuberculosis and is to the horse what tuberculosis is to man. It is usually a chronic ailment, often hidden or latent, rarely acute. The most prominent symptom is a discharge from one or both nostrils. It is this discharge which contains glanders bacilli and which constitutes the chief danger to man. Sometimes the disease attacks the skin of the horse and it is then called farcy. Abscesses form and discharge their contents outwards, soiling the skin and scattering the bacilli. Unlike anthrax, glanders does not work at a distance or through animal products, because the bacillus does not form spores and its vitality is limited. A period of four to six weeks represents the maximum duration of life outside of the body. The average duration is probably much less than this. The danger to man consists in handling the animal alive or soon after death. A wound on the hands or other exposed parts of the body forms the portal of entry for the bacillus from the horse. In man the disease is frequently fatal, or, if not fatal, it lasts a long time.

Fortunately for us, glanders bacilli do not always infect human beings exposed to them, otherwise there would be many more cases than are now reported. Thus in Massachusetts alone there were killed in 1908 over 900 horses and mules visibly affected with glanders. Every one of these cases must have exposed perhaps one attendant to the disease; yet the cases in man are relatively rare. Probably certain favoring conditions must be at hand before the glanders bacillus can multiply in wounds and set up disease. The dangerous character of the bacilli cannot be minimized however. During the past fifteen years three distinguished scientists have lost their lives from laboratory infection.

Active measures against the disease in horses are in operation in all civilized countries. In Massachusetts animals openly diseased are seized and killed. Unfortunately there are many infected animals which are not openly diseased, and which are not discharging the bacilli. These may become openly diseased later on or they may recover. Sometimes very valuable animals respond positively to the test for glanders; but the skilled veterinarian is unable to find any disease even after very careful examination. What to do with such cases constitutes a serious problem in public health administration.

Rabies is an infectious disease of dogs, wolves and allied species, which is transmitted by the bite of the rabid animal to a large number of other species, including man. The rabic virus has no predilection for any small group of species, but appears to find a suitable soil in all mammals. Being quite perishable, the virus discharged in the saliva of the rabid animal does not survive in nature. The living affected

animal is therefore the only object which needs consideration from a public health standpoint. It is both the producer and distributor.

Much has been written in recent years concerning the symptoms of the disease in dogs, and its fatal termination in man when the symptoms have begun to appear. We may turn from these to consider certain general precautions which all dog owners should observe for the good of the community.

The variable period of incubation makes it a difficult disease to stamp out. It may vary from three weeks to many months. Dogs bitten by rabid animals are usually quarantined for ninety days. The carelessness and indifference of the public has permitted a wave of rabies, which has counted not only thousands of victims among dogs, but also many cases in man, to sweep over our country. What the situation would have been without the Pasteur treatment we may consider ourselves fortunate not to know. The difficulties of suppressing this disease are greatly increased by the tendency of rabid dogs to run long distances and inoculate fresh dogs over a wide territory. They cross State and national boundaries, and the care and vigilance exercised in one community are nullified by the negligence of adjoining ones. England, which enjoys the great privileges of an island isolation, has been able to stamp out rabies completely, and does not need Pasteur institutes. All imported dogs are quarantined for a certain period before they are set free. Perhaps the chief obstacle to the eradication of this dread disease is a certain soft-heartedness of civilized people, which interferes with the application of such simple measures as the destruction of vagrant dogs and the muzzling of all running at large. This soft-heartedness, exercised in so many directions, unless held in check and duly controlled, may in time lead to the physical ruin of civilized races.

As long as rabies threatens us and our helpless children on the streets, the Pasteur treatment will remain a great boon. It is based on the simple principle that the body, artificially and hurriedly immunized after the bite, becomes capable of coping with the virus when, after the slow movement of the latter along the nerves from the wound, it finally reaches the spinal cord and medulla. The vaccine used is the dried cord of a rabbit which has been inoculated with a virus greatly modified by numerous passages through the rabbit, and thereby made harmless to man. It is obvious from the nature of the treatment that there should be no delay in applying it. Meanwhile, all should co-operate in ridding our country of this disease, and I have no doubt that we shall receive hearty assistance from our northern and southern neighbors, for such a campaign must of necessity become wide as the continent.

The bubonic plague represents among man a class of nearly extinct diseases which are still common among the higher animals. These diseases are called septicæmias or blood diseases, and are rapidly and highly fatal. Occasionally surgeons and others die very quickly after receiving some small wound during operations upon infected organs. It is conceivable that such virus, if the machinery for its transmission were at hand, might produce another Black Death. Fortunately the virus dies with the victim. The habits of civilized life stand in the way of its perpetuation. The bubonic plague is practically a wound infection; for the painstaking researches of bacteriologists have clearly shown that the virus is transmitted from rat to rat chiefly through the wounds inflicted by fleas, and that man is infected in a similar manner. My reason for touching upon the plague here is that it is really a disease of certain lower animals, and that it is perpetuated by them. Wherever the disease has been studied, the rat, with the assistance of the flea, has been found to be the carrier and disseminator. In Central Asia a species of woodchuck maintains the infection. In California not only rats but also ground squirrels appear to be taking on themselves the rôle of perpetuators and disseminators. The only remedy seems to be the destruction of these animals wherever they tend to come in contact with man. It is in this direction that the warfare against the bubonic plague has been waged hitherto. If this scourge should escape from its present narrow territory and spread over the country, its eradication would become a hopeless task. The burden of modern life would be increased by the weight of another infectious disease to be fought.

Foot-and-mouth disease, which occurs among cattle, sheep and swine, interests us here because it is occasionally transmitted to man in dairy products. It may be classed as an eruptive disease, for it is characterized by the presence of vesicles in the mouth and on the feet. These break and leave a denuded surface, which heals rapidly unless other disease germs are present which may implant themselves in these ulcers. In man the disease shows itself in vesicles around the mouth, and is a very mild affection. The objection to this disease is that it occasions serious losses in the dairy industry, and the exertions of the national government in stamping out the recent localized outbreaks in this country are to be commended, for once scattered over the whole country the disease probably would never again be completely stamped out.

Among the infections transmitted by contact or inoculation there remain to be mentioned certain skin diseases which children may contract from diseased mice and cats. These diseases are caused by fungi, and the spores produced by them may implant themselves on the skin

of children and produce affections resembling ringworm. Though cases or even epidemics of skin disease thus transmitted are not uncommon in European countries, there appears to be as yet little known of such occurrences with us. This, I think, is due to the fact that we are still a very young civilization, into which many infections have not yet penetrated, or in which they have not yet succeeded in taking root when introduced by merchandise or immigrants and their effects. The stock of infectious diseases in any one country is like the junk heap or pile of refuse in the cellar or yard of an untidy family. Each month or year adds new elements to it; but nothing is taken away. Unfortunately for our posterity we are not sufficiently alive to the great importance of prevention. We fail to stamp out the spark, but we make a tremendous effort when the fire has once started. This is perhaps no more than we may expect from average human nature; for a keen sense of futurity, of what our present action or inaction may mean to the future, is an outgrowth of only the highest types of civilization.

The diseases which have been discussed are chiefly transmitted by inoculation. The virus enters wounds of the skin or mucous membranes. The group of infections carried in the food is of equal if not greater sanitary significance. Among this latter group tuberculosis has taken a rather prominent place before the public in recent years. Like rabies, tuberculosis may attack many species of mammals and birds. Unlike rabies, however, the virus of tuberculosis among different species is not necessarily identical. We may assume that upon implantation of the bacillus in a species different from the one from which the bacillus came a gradual change takes place and a new variety becomes established. How long a time this change demands, how often or how rarely it takes place, how many times the transformation fails to take place, we do not know. It is, however, established that three distinct races exist, one adapted to man, one to cattle and one to birds, such as domestic fowls and pigeons. Whether they have actually been derived one from the other, and whether they are capable of transformation one into the other, are matters of hypothesis and speculation at present which will not detain us; for they cannot be utilized as a basis for sanitary measures.

Among domestic animals, cattle suffer most severely from this plague. Next come swine, which contract it from cattle and probably not from each other to any extent. Horses are rarely the victims of tuberculosis. Among poultry the disease is evidently increasing. Animals in zoölogical parks, especially monkeys, are not infrequently victims.

Turning to the sanitary bearings of animal tuberculosis, we may accept as demonstrated that in a certain number of cases of the human disease the infection comes from cattle and perhaps exclusively from

the milk. The infection takes place through the digestive tract, and produces certain types of tuberculosis affecting the glands in the neck and the abdomen. It must not be thought, however, that all such cases come from milk. Investigations have shown thus far that from one-quarter to one-half of these cases, according to the locality, are of bovine origin. On the other hand, the prevalent type of tuberculosis, which affects the lungs and which leads to disintegration of lung tissue and expectoration of tubercle bacilli, has not yet been proved to be of bovine origin.

The flesh of tuberculous cattle and swine is probably no appreciable source of the human disease for several reasons. The bacilli do not, as a rule, become disseminated through the blood until in the last stages of the disease. Animals in this condition are rejected by meat inspectors. Heat of a relatively low degree destroys tubercle bacilli, and even if they should escape the inspector's hands the process of cooking would render them harmless.

With milk the conditions are quite different. It may be consumed raw, pasteurized or boiled. If boiled all disease germs are killed. If pasteurized in a proper manner, let us say exposed in a closed vessel to a temperature of 140° F, for thirty minutes, or to higher temperatures at proportionately shorter intervals, all disease germs worth considering are likewise destroyed. Many physicians have declared themselves as opposed to the use of pasteurized milk for infants, and insist on the freedom of raw milk from disease germs. Pasteurization should neither be condemned nor accepted unconditionally. It has a valuable place in sanitation; but this place must be carefully determined. The process of pasteurization should be subjected to the approval of health authorities, and only reliable methods authorized. The pasteurized milk should be examined bacteriologically, and guarded and controlled just as raw milk is.

The destruction of tubercle bacilli in milk is only a palliative. There remains still the source of the difficulty. The complete eradication of bovine tuberculosis has been the goal of many sanitarians. To destroy all infected cattle has been attempted several times in certain States; but the magnitude of the task and its enormous cost have paralyzed the attempt. Most conservative sanitarians recommend to-day the organization of dairy inspection on a permanent basis, the removal of all cattle with suspicious udders, or in an advanced stage of tuberculosis, at regular intervals, say, at least every three months, without compensation, for such animals are in any case unsalable. At the same time owners of dairy cattle are strongly urged to use the tuberculin test, and with its aid rid their herds completely of this disease. With rigid dairy

inspection and the education of the owners by such a procedure, and the free application of the tuberculin test by the State under certain specified conditions, the time will soon come when the general application of the tuberculin test will follow as a matter of course, without entailing any serious loss on the individual owner or an intolerable burden on the community.

A disease little known in this country which, however, has played an important part in Germany, is trichinosis. Its source is the raw or partly cooked flesh of swine. It comes about as follows: in the flesh of certain swine may be found microscopic worms known as trichinæ. The infected swine obtained them by eating other infected animals, such as rats and swine. When man eats such meat raw or slightly cooked, the worms in the muscles are set free in the stomach. They pass into the small intestine, grow into adults, give birth to thousands of young, which bore their way through the walls of the intestine and are carried by the blood into all parts of the body. During this migration the patient may die if he has eaten a large amount of infected flesh. If he survives, the young worms come to rest in the muscular tissue, and they may remain alive many years without giving the person any serious inconvenience.

What serious dimensions this disease may take when uncontrolled by sanitary measures such as cooking, one example will show. In 1865, in a small town of 2,000 inhabitants, a trichinous pig was slaughtered, the flesh sold and eaten raw by the inhabitants in the form of spiced meat. Three hundred and thirty-seven cases of trichinosis occurred and 101 of these died. The examination of the muscles of human beings dissected in medical schools has shown upwards of 5 per cent. infested with trichinæ. These victims during life probably never knew that they had had an attack of trichinosis, because the few parasites consumed caused only a mild attack. In this disease prevention is very simple and easily applied. Pork should be thoroughly cooked. In Germany an extensive meat-inspection service exists, simply for the purpose of eliminating infected pork. If all pork consumed were eaten well cooked, this expensive service would be unnecessary.

A peculiar fever has been known for years on the Island of Malta, occurring among the soldiers of the garrison stationed there, and called Malta fever. The soldiers are confined for days, weeks and even months when affected with the disease. It is characterized by pains in the joints and muscles, great prostration and a long-continued fever, extreme emaciation and weakness, and a slow recovery. Death occurs but rarely. The micrococcus which was the cause of the disease was discovered in 1887, and since that time efforts have been made to discover the source

of this germ. All sorts of vehicles have been suspected as being the carriers of the disease into the garrison. It seemed that social position offered no protection, for the officers and their families were attacked as well as the soldiers. Dust, mosquitoes and other possible vehicles were investigated, but these studies did not confirm suspicions. Only recently raw goat's milk was found to be the carrier of the micrococcus. There were 20,000 goats to supply 200,000 inhabitants with their milk. In 1905 there were 643 cases admitted to the hospital; in 1907 there were but 7 cases, thus showing the effect of discovering a method of preventing the disease.

In concluding this part of my discourse I will merely mention, as a matter of curiosity, an infectious disease of parrots, called psittacosis. Attention was first drawn to it in 1892, when a consignment of parrots from South America introduced into a number of families in Paris a peculiar and fatal form of pneumonia. Of 500 parrots shipped to Europe only 200 survived some infectious disease which broke out on the way. These survivors carried the infection into the purchasers' families. This incident simply suggests watchfulness on our part towards domestic pets, and especially towards those recently introduced from foreign countries.

Besides the above-mentioned diseases of animal origin, in which a well-recognized micro-organism is the cause, there is a group of affections known as meat poisoning, in which certain closely related bacteria figure as causes. In all cases the digestive tract is involved. There is diarrhœa and vomiting, with fever, and often great prostration. Even death has occurred.

The bacteria are close relatives of the typhoid bacillus and have been called paratyphoid bacilli. They originate in sick animals, such as cattle and swine, more rarely in horses and sheep, and when the flesh of such animals is eaten raw or only partly cooked the bacteria multiply in the digestive tract, and their toxins are responsible for the attack.

Our knowledge of meat poisoning is chiefly of German origin. The local origin of the meat supply there leads to epidemics occurring over a restricted territory, and the attention of public health authorities is at once aroused and the cause located. In our large cities the tracing of small epidemics is well-nigh impossible, because the animal yielding the meat may have been raised in the far west, slaughtered in the middle west and its various parts disseminated over a large eastern city.

In Germany over 5,000 cases of meat poisoning have been reported and studied within the past thirty years. They occurred as epidemics involving from 20 to 500 people each. In some the mortality was high.

It is safe to assume that all severe digestive disturbances, manifested

by vomiting and purging, in otherwise healthy individuals are caused either by food from diseased animals, or else by food, either animal or vegetable, which is partly decomposed. Every such attack should call the attention of the family to the food, especially its source and the way it is kept at home. It may have been kept too long and in inefficient refrigerators. The fact that the air of a refrigerator feels cold on a hot summer day does not prove that the temperature is low enough to suppress the multiplication of bacteria. Where there is doubt that the food is in good condition it should either be destroyed or thoroughly cooked again. Some authorities claim that even well-cooked foods may still contain the toxins of the bacteria and cause disturbances. I am inclined to believe that this claim has been urged too much, and that, unless the food is manifestly spoilt and not merely suspected, a second cooking will make it safe. To infants and very young children such food should of course not be given.

From what has been said it becomes evident that the application of heat in the preparation of food has a sanitary as well as a physiological bearing. Cooking has eliminated and continues to eliminate diseases which, if allowed to go unchecked would greatly hamper our civilization. Cooking is thus a factor of great importance in the prevention of infectious diseases, and its importance is destined to grow with the density of population and the opening up of new channels of infection. Any tendency to go back to raw or partly cooked foods should be frowned upon by sanitarians, for it may become impossible in the future to guarantee the innocuousness of foods now eaten raw or only partly sterilized by heat. Only the isolated homestead, where all foods are raised for home use, may with impunity be a law unto itself in these matters.

In general it may be stated that at present any one of the diseases mentioned adds but little to the death roll due to infectious diseases as a whole. This, however, is due to the fact that they are fairly well under control, because governments have enacted laws as soon as sufficiently definite knowledge was at hand upon which to base legislation. The past history of every one of these diseases is formidable enough to make us realize the danger which society might run if they were ignored as dangers to human health and life, and all safeguards removed. That these safeguards are not perfect is well known, but it should be remembered that these diseases constitute a problem the solution of which requires thorough knowledge, not only of the disease itself, but of its industrial, agricultural and humanitarian relations. There are antagonistic interests to be conciliated and sacrifices to be balanced in every effort to improve the public health, for there can be no upward movement

without sacrifice of some kind. These antagonistic interests are very much in evidence in the suppression of animal diseases, because the sacrifices to be borne become concrete in the lives of animals whose value is measured by the well-known standard of dollars and cents.

CEREAL IN MEAT PRODUCTS.

Notice is hereby given that on and after Jan. 1, 1910, it will be necessary that the presence of cereal, and its percentage, in meat products (sausage, veal loaf, etc.) must be indicated upon the labels, in accordance with section 19 of chapter 75 of the Revised Laws.

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